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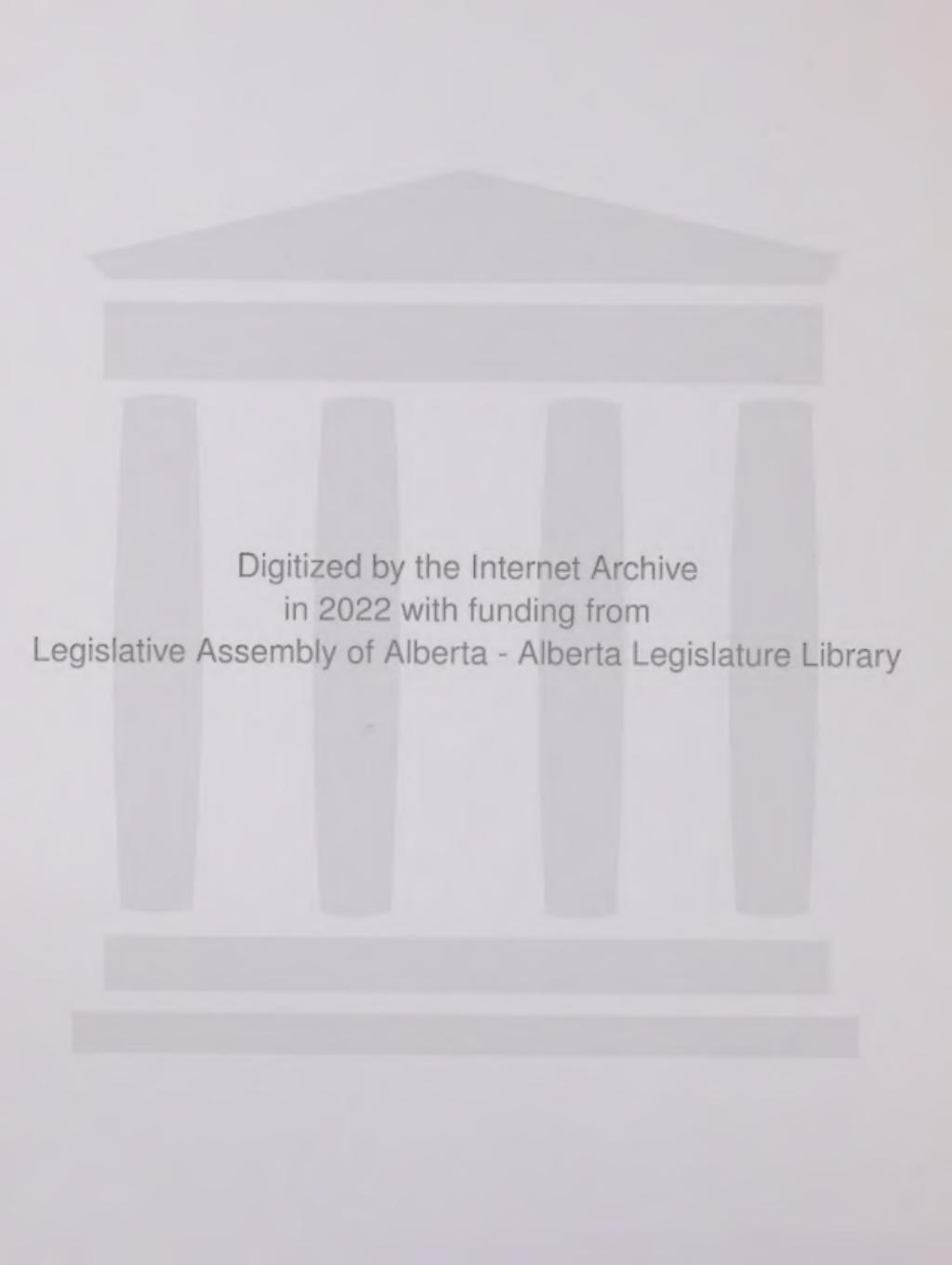
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**A SOCIO-ECONOMIC
AND
RESOURCE EVALUATION STUDY
OF THE
SARCEE INDIAN RESERVE**

STANLEY ASSOCIATES ENGINEERING LIMITED

DECEMBER 1970

A faint, light-grey watermark of the Alberta Legislature building is visible in the background. The building features a prominent portico with four columns and a triangular pediment. The text is overlaid on this watermark.

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Stanley Associates Engineering Ltd.

CONSULTING ENGINEERS

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March 29, 1971

File 909-1-a

Mr. J. E. Oberholtzer,
Director,
Human Resources Development Authority,
Room 228,
Legislative Building,
Edmonton, Alberta.

Dear Sir:

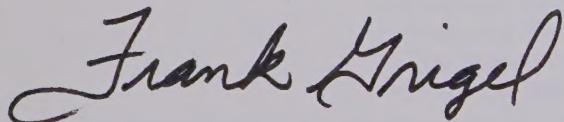
We are pleased to submit this Report on our Socio-Economic and Resource Evaluation Study of the Sarcee Indian Reserve. The report was prepared in accordance with the Agreement between HRDA and Stanley Associates Engineering Limited dated 17 October, 1969.

The study reviews social and educational conditions on the Reserve as well as existing physical conditions, and makes recommendations for future development in the areas of agricultural, recreational, industrial and urban development. Among projects recommended for immediate development are a mobile home park, an over-night tent and trailer park and a secondary homes development.

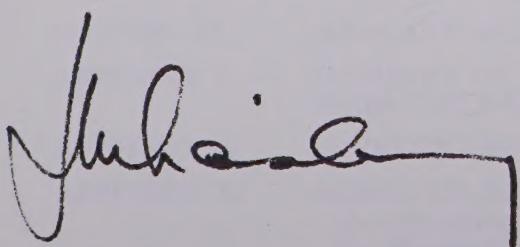
We would like to express our thanks to the Study Advisory Group, to the many Provincial and Federal Governmental Agencies who participated in the study, to the City of Calgary and to the many members of the Sarcee Band who provided the necessary data and worked closely with us during the course of this study.

We appreciate the opportunity of taking part in this important phase of development for the Sarcee Reserve.

Yours very truly,
Stanley Associates Engineering Ltd.
Per:



F. W. Grigel, P.Eng.
Branch Manager



J. M. Lainsbury, P.Eng., M.T.P.I.C.
Chief Planner

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SECTION I — INTRODUCTION

This report covers what may be described briefly as a human and physical resource study of the Sarcee Indian Reserve.

The study was initiated by a request from Sarcee Band Council to the Human Resources Development Authority (HRDA) of the Province of Alberta. Because the Reserve is located immediately adjacent to Calgary, the Band Council is frequently approached by outsiders with various business propositions involving Sarcee land, and Council therefore deemed that a definitive study on resource development was vital to the optimum development of the Reserve in keeping with the desires and best interests of the Band.

HRDA accepted this as a worthwhile project and subsequent financial support was obtained from the Federal Government, Department of Regional Economic Expansion (DREE).

A study advisory group was set up to develop the terms of reference, select a specialist firm to do the work, and act in an advisory capacity throughout the study. Members of this advisory group are as follows:

Sarcee Band Council

Prior to December, 1970	Subsequent to December, 1970
Chief—Dick Big Plume	Chief—Gordon Crowchild
Jim Simeon	Lawrence Whitney
Gordon Crowchild	Cliff Big Plume
Robert Dodginghorse	Bruce Starlight
Fred Eagletail	Victor Starlight

Band Members at Large

Mrs. Jean Dodginghorse
Mrs. Helen Meginnis
Mr. Peter Manywounds

Department of Indian Affairs

Mr. M. Kartushyn, Acting District Supervisor, Blackfoot/Stoney/Sarcee
Mr. E. Williams, Industry & Small Business Officer Mrs. Regina Crowchild

Province of Alberta

HRDA—Mr. G. Sterling, Co-Ordinator
Dept. of Lands & Forests—C. M. Harvie
Dept. of Industry & Tourism—Mr. I. R. Huene

Government of Canada

DREE—Mr. K. Tarasoff

Stanley Associates Engineering Ltd. (SAEL) were selected by the Indian component of the Advisory Board

after reviewing proposals, invited by public advertising, from a number of consulting firms. SAEL's proposal involved a team approach in that other specialist companies and individuals were to participate in the study, which because of its scope contained various areas where specialist input was required. Participants were:

STANLEY ASSOCIATES ENGINEERING LTD. —

Overall study co-ordination, industrial, commercial and urban development.

FARM & RANCH MANAGEMENT CONSULTANTS LTD. — Agriculture & Forestry.

G. BANTA ASSOCIATES LTD. — Sociology, community development.

W. BOCK — Education.

TRAVACON RESEARCH LTD. — Recreation.

PETRASUK, MAGUIRE, HALLGREN & STARCHUK — Legal.

CLARK-SWANBY & ASSOCIATES LTD. — Land-use planning.

Several previous studies had been done on the Reserve. One printed in March, 1967 "An Evaluation of the Potential of the Sarcee Indian Reserve" by F. E. Price & Associates Ltd., pointed out some of the agricultural potential in some detail, but essentially the study indicated areas which should be studied further.

Travacon Research Ltd. did a small study in 1967 on the recreation potential of the Reserve, but centred mainly on the immediate potential of the Bragg Creek area for summer cottage development. Few Band members knew these studies had been done as Indian involvement seems to have been minimal.

This study was started immediately after signing of an agreement with HRDA in late October, 1969, with a time to completion stipulation of 12-15 months.

It has not been our intention to use any significant part of the budget in compiling statistical data on the Reserve which is readily available from other sources. We have been more interested in the future of the Reserve than in its history. Through continued Indian involvement we have tried to avoid the pitfalls encountered with other studies, and overcome the many impediments to development which are found on the Sarcee, and seemingly on all Reserves. We believe that we have achieved a high degree of success in this respect. At the time of writing, an Indian Development Board has been operating full time for five months. An industrial concern is ready to begin operations on the Reserve (manufacturing prefab cottages, garages and houses), and other projects to provide employment, training and income to the Band are being actively pursued.

This study, with the full agreement of the Advisory Committee, moved into development implementation prior to completion of the overall resource report. Use of study funds for project implementation was made in the sincere belief that this was in the best interest of all concerned,

in that it would have been a pity to "apply the brakes" because of lack of funding, just as the interest and enthusiasm of the Sarcee in getting projects underway had been aroused.

SECTION II — STUDY METHOD

There have been many studies done on Reserves in Alberta and the rest of Canada. Many of these were excellent in outlining development opportunities and fulfilling the terms of reference, but in many cases when the study was completed and published nothing further happened. Many of these reports exist which were not read or understood by the Indians and rapidly became obsolete as the market survey conditions changed.

Avoiding this type of exercise in futility was of great concern to the Consultants and to the Study Advisory Committee, and much discussion took place in planning this study so as to avoid the pitfalls which past studies had encountered, such as lack of interest by the Indians, apathy, feeling that this was just another study, lack of involvement of the Indians, poor communications with the Indians, lack of understanding of real impediments to development on the Reserves, and not bothering to find out what the Indians themselves wanted or did not want.

The firm of Stanley Associates Engineering Ltd. was selected as study consultant in May of 1969 but it was not until October of that year that the contract was signed and the consultants were authorized to proceed. There were various reasons for this delay. Approvals for the project had to be cleared through Provincial and Federal Governments. Then, too, the Federal "White Paper" on abolition of the Indian Act had just been made public and there was considerable opposition among the Indians to the ideas in the "White Paper". There was much groundless suspicion that having the study done would "play into the hands of the Government". To overcome these fears the consultants explained repeatedly the purpose of the study at several Band meetings and Council meetings, and the Sarkees were assured that the study would help, not hinder, their aims and objectives. Accordingly, when the study started in October, most people on the Reserve had some idea of what the consultant was trying to do.

The initial approach of the study team was to make the people aware of the different phases of the study, and then to attempt early involvement through the formation of various interest groups. For example, a group interested in the development of the Bragg Creek areas for cottages, tourism and recreation would work with the study team on this aspect. The group would be responsible for communicating their findings to the rest of the Band and, after the study, their group or members of it would assume responsibility for that aspect of Reserve development as part of an overall Sarcee Development Group.

A two phase study was planned, the first phase being resource evaluation, with the interest groups helping

to screen out those projects which were not feasible for various reasons. The second phase would be to concentrate in detail on the feasible projects, establish a Development Board, and begin project implementation.

Indian people were not to be paid for attendance at these group meetings, but it was planned to offer individual contracts for obtaining certain data or information required for the study. The Study Advisory Group concurred wholeheartedly with this approach.

An explanatory letter and list of projects were mailed to every adult on the Reserve. Four Indian men were hired to visit each home and discuss the study concept and make sure that everyone knew what procedure was planned and how they could participate.

A scale model of the Reserve was made at this time as an aid in communicating the location of projects and land requirements in relation to the whole Reserve.

Interest group meetings were started in December of 1969, and with a two week shutdown for Christmas and New Year were renewed again in January and February of 1970. Indians were paid to notify others of these meetings.

By February, it had become apparent that this approach, which sounded good in theory, was not effective in practise. While attendance at meetings was quite good, it was always the same people who were involved. In other words, there was a core group of 12 to 15 men and women who were genuinely interested in the development of the Reserve and who attended every meeting on every interest group subject. These people were in fact the leaders of the Reserve, though not elected councillors.

It also became evident that because the core group members were young, active and interested, they generally had a job or were in school or taking courses, and were therefore not readily available to drop their other activities and take on a short-term contract as described above. The ones who were unemployed and who had the time were not interested enough to come out to meetings.

There was considerable resentment in the core group about the fact that the Chief and Council, with the exception of one Councillor, did not attend the meetings at all. "What good does it do us to talk about these things and plan when Council do not understand and can veto everything?" "They should be here to know what is going on", were typical comments.

Chief and Council in rebuttal explained their actions by saying in essence:— "we want to know what the people are interested in. If we go to the meetings, people may be afraid to talk and discuss things freely".

During these three months, resource work was being carried on by the consultants and an understanding of the sociological factors on the Reserve was being gained. G. Banta had started living on the Reserve in November, boarding with an Indian family, and had hired a Band member, Mrs. Jean Dodginghorse to carry out a social study of the Reserve. Mr. Banta lived on the Sarcee Reserve for 4 months and in this way became quite familiar with the various impediments and incentives to development on the Reserve.

In March the situation with respect to involvement was reappraised for the reasons outlined above. It did not seem that this was the way to continue. It did appear that there were great opportunities for development projects on the Reserve, but a great many impediments to development were also apparent. By then a very good feel for what the people wanted and did not want, had been achieved, and this led to something of a quandry. Certain projects appeared very worthwhile for Band income and employment. Others did not appear feasible. Should study continue on certain projects which had been found to be very feasible, in the face of the findings of the social survey and from the meetings with the core group that the Band members wanted no part of these things?

As an example, a preliminary analysis of the potential for urban development of the east end of the Reserve as a normal extension of Calgary showed that very large returns could be obtained from relatively small amounts of land. Long term leases would obviously be required. The feeling of the great majority of Band members was that they did not want whites living on the Reserve, and they did not want to lease land for long periods. (The feeling that the land is "sacred" is extremely strong on the Reserve.) Yet this could not be abandoned as a potential development without making sure that such a decision was rational, in that everyone knew exactly what was involved; how it could be done, how much land would be leased, and for how long, and what returns to the Band could be expected.

There were many other examples of both this kind of situation and its corollary; strong indications of interest in things which would not produce revenue or employment, and which would in fact be money losers. An artificial ice arena is a case in point.

At this stage of the study process, it became critical to arrive at a consensus with respect to development priorities. Development of a Master Development Plan in the absence of such a consensus would surely have been an exercise in futility.

A meeting was held with the Advisory Committee to discuss the situation. The study team proposed the use of video-tape techniques to interview a good number of

people on the Reserve, explain the study findings, and get their comments on development in the light of imparted knowledge of the pros and cons. It was proposed that these interviews would be edited and shown back at a band meeting. It was expected from previous experience in community development that this technique would draw a large turnout to the band meetings, and assist greatly in the achievement of a consensus position.

Mr. Daggitt, District Supervisor, Blackfoot/Stony/Sarcee, suggested a variation on the above plan which involved taking 25 to 30 of the Band leaders away from the Reserve for five days for a concentrated review of study findings which would hopefully lead to a general agreement on development priorities.

This was agreed upon and a "workshop" was held in April at the Banff School of Fine Arts. Prior to this meeting an Indian team was hired to conduct a number of video-tape interviews and a 5-man Indian team helped to edit these. The edited tapes were shown on the first day of the Banff workshop, and in the Consultant's opinion did much to break the ice and get the workshop started successfully.

The format for the workshop called for introductory remarks by each specialist consultant. The group of 30 was too large for discussion and so were divided into five smaller groups. Each specialist consultant had half a day with each group discussing the study findings of his particular area. Then each group had half a day to prepare recommendations and on the last day each small group read their recommendations to the main group. As a result of the following discussion, a consensus was arrived at as to a future course of action and what the priorities of development should be.

A summary of the recommendations of the group reports on the last day is included in Appendix I. The course of action indicated is quite clear. The Indians want action more than further study; a development board is to be formed and certain projects given priority such as an arena, mobile home park and industrial park. There was, after all the facts were presented, an almost uniform rejection of urban development requiring long term leases, and a complete lack of interest was noted in a good number of other projects.

During the week following the Banff meeting, Indians were hired to go to every home on the Reserve to explain what happened at Banff, and a Band meeting was held shortly thereafter to make sure everyone knew what the outcome had been.

Under these circumstances of clear direction from the workshop, the Council selected two men to start on development work full time. Since that time the study team has been assisting this group in developing projects, and finishing the report at the same time.

Studies in the past have been clear cut resource studies. On completion implementation is supposed to start but traditionally has not started. This study, through continued involvement of the Indians, got quickly into the implementation phase. It became a community development project rather than a strict resource study done in isolation.

As of this writing, an industry making cottage and pre-fab houses has been attracted to the Reserve and will be in full operation before the end of 1970. This indus-

try will employ 8-10 Indians initially and more in the future. Further industrial developments are being promoted. Negotiations with the City for a joint project arena are underway. Plans for a mobile home park are close to the design stage. Plans for an overnight camp ground are being worked on. A cattle feed lot has been started. Negotiations with various groups regarding establishment of golf courses, a riding academy, a welding shop and other enterprises are under way. It is felt that these activities are an indication that the study procedures followed were extremely successful.

SECTION III — DESCRIPTION OF RESERVE

LOCATION AND SIZE

The Sarcee Reserve No. 145 originally comprised three townships of land described as Townships No. 23, Range 2, 3 and 4, W. 5 Meridian. Two land sales have occurred since the Reserve was established. Approximately 940 acres in the extreme northeast corner were surrendered for sale to the Department of National Defence (DND) in 1913 for the establishment of Camp Sarcee and finally sold to the DND for some \$200,000 in 1953. Approximately 593 acres immediately south of Camp Sarcee were sold to the City of Calgary for \$50/acre in the early thirties for backwater of the Glenmore Reservoir. The present area of the Reserve is 67,587 acres.

Another factor affecting development of the Reserve is a lease of 11,800 acres in the north-east to DND as a military training area in 1913. The latest renewal of this lease is for 20 years from October 1, 1961 at an annual rental of \$41,300. (Raised as of October 1, 1968 to \$65,000 and renegotiable as to rental every 5 years starting October 1, 1973.) In reviewing the records it appears that there never was a proper lease drawn up for the military training area which defined such things as whether the lease could be cancelled by either party or whether it was automatically renewable. The agreement seems to have been by letter between Indian Affairs and DND.

To further describe the Reservation location it is immediately adjacent to the south west part of the City of Calgary sharing 37 Street S.W. as a common boundary. The County of Foothills borders the Reserve on the south and the County of Rockyview on the west and north.

PHYSICAL DESCRIPTION

The F. E. Price & Associates Ltd. report describes the Reserve as being roughly divisible into three general areas corresponding approximately to the three townships.

- a) The eastern township is somewhat sandy rolling country falling off to the scenic Fish Creek Valley in the south and to the Elbow River in the north. Over half of the Reserve population live in this township and the Bull Head Community Hall, the two churches and the Band Administration Building are located here. The area contains extremely valuable land for urban development, industrial, commercial, recreational and tourism projects.
- b) The centre township is mainly agricultural with bush cover towards the west. The rest of the population, with the exception of two families, live in this township.
- c) The western township is fairly heavily wooded

and hilly. This is very scenic country. The Elbow River runs through the north west corner of this area. Two families live in this area.

ADJACENT PLANNING AND DEVELOPMENT

The Calgary Regional Planning Commission has the planning and zoning responsibility for all areas surrounding the Reserve, though not for the Reserve itself. Generally speaking the Regional Plan limits industrial development to the east side of the City of Calgary. The City zoning adjacent to the Reserve is residential and associated service commercial. The two surrounding counties have by-laws restricting urban development, such as acreage parcelling of farms, and are further restricted by the Regional Plan to agricultural and recreational types of developments.

While neither the City of Calgary, the Counties or the Regional Planning Commission have any jurisdiction over the development on the Reserve, any such developments should as much as possible conform with good planning practices for the entire region. A good neighbor policy towards the City of Calgary and surrounding counties should be actively pursued as the co-operation of the City in particular will be most helpful to the success of various projects on the Reserve.

Because the Reserve is so close to Calgary, the east end in particular can be considered as an undeveloped part of Calgary. Those locational factors which have helped lead to Calgary's present size and future growth potential are highly pertinent to the potential for development of the Sarcee Reserve.

The City of Calgary is an active urban centre (population 400,000) and is growing at the rate of approximately 1,000 persons per month. The population is expected to reach 775,000 by 1986. At the same growth rate the population by the year 2000 will be 1,100,000.

The geographic location of Calgary hardly needs to be illustrated. Located at the confluence of the Bow and Elbow Rivers, the City occupies a key position in southern Alberta. It is respectively 90 and 180 miles by road to Red Deer and Edmonton to the north. Lethbridge and Medicine Hat, other important centres of population, lie generally to the south-east at distances of 135 and 185 miles respectively. Major highway access is provided by the Trans-Canada Highway #1 which passes through Calgary in an east to west direction, enroute from Medicine Hat to Banff. Alberta Highway #2 is one of the most important north-south routes in Western Canada and forms the southerly extension of the Alaska Highway in Canada. The City is served by both the CNR and the

CPR. Important air transportation connections includes flights to all major Canadian cities. International service is provided to Spokane and Denver as well as direct flights to Europe, the Pacific and South America.

The City of Calgary, due to recent annexations, covers a large geographical area. There is little or no fringe development.

The Bow River Valley, in which Calgary is located, forms the major topographic feature of the area. Two smaller streams with relatively deep valleys flow through the City into the Bow River; Nose Creek from the north and the Elbow River from the southwest. Another prominent topographic feature is Nose Hill in the north west portion of the City which rises steeply above the surrounding terrains and has affected the direction of residential development in that area.

The period since the Second World War has been one of increasing industrialization. Manufacturing has

increased but the greatest expansion has taken place in construction and in industries associated with oil and gas. The main industrial areas in Calgary are in the east and south east sections of the City. The land bordering the Reserve in the south west is all zoned for residential and service commercial. Housing developments north of the main access to the Reserve, Anderson Road, are now within half a mile of the Reserve boundary.

RESERVE POPULATION

The total population of the Reserve as of mid 1970 was 466. The following age-sex breakdown is significant, showing that 59.6% of the population is under the age of 20. If the population continues to expand at its present rate of 5% per year, by 1985 there will be about 1,000 Band members.

However, on the Table shown there is a slight decrease of late in the birth rate. It is too early to estimate how low the birth rate will drop.

Population Table

Age	Female	Male	Total	Cumulative
0 - 4	36 - 15.2%	36 - 15.8%	72 - 15.4%	15.4%
5 - 9	45 - 18.8%	43 - 19.0%	88 - 18.9%	34.3%
10 - 14	32 - 13.4%	30 - 13.2%	62 - 13.3%	47.6%
15 - 19	27 - 11.3%	29 - 12.8%	56 - 12.0%	59.6%
20 - 24	17 - 7.2%	16 - 7.0%	33 - 7.1%	66.7%
25 - 29	18 - 7.5%	13 - 5.7%	31 - 6.7%	73.4%
30 - 34	13 - 5.5%	12 - 5.3%	25 - 5.4%	78.8%
35 - 39	11 - 4.6%	7 - 3.1%	18 - 3.9%	82.7%
40 - 44	13 - 5.5%	16 - 7.0%	29 - 6.2%	88.9%
45 - 49	9 - 3.8%	7 - 3.1%	16 - 3.4%	92.3%
50 - 54	1 - 0.4%	4 - 1.7%	5 - 1.1%	93.4%
55 - 59	5 - 2.1%	8 - 3.5%	13 - 2.8%	96.2%
60 - 64	5 - 2.1%	3 - 1.3%	8 - 1.7%	97.9%
65 - 69	1 - 0.4%	2 - 0.9%	3 - 0.6%	98.5%
70 - 74	3 - 1.3%	1 - 0.4%	4 - 0.9%	99.4%
75 - 79	1 - 0.4%	0 - 0.0%	1 - 0.2%	99.6%
80 - 85	2 - 0.8%	0 - 0.0%	2 - 0.4%	100.0%
	239	227	466	

CURRENT LABOUR FORCE AND SKILLS

A complete breakdown of the current labour force and their skills is shown in Appendix II. It follows from the population table that for males alone there will be 29 (now in the 15-19 age bracket) joining the labour force in the next 5 years, another 30 (now 10-14) joining in the next 6-10 years and 43 more (now 5-9) joining in 11-15 years. Opportunities for these young people must be made available, for certainly the current sources of Band revenue will not be enough to provide for the housing and other requirements of the growing population.

BAND FINANCIAL STATUS

The most important observation to be made with respect to the Sarcee's financial status relates to the ongoing depletion of their Capital Fund. A review of this fund over the past three years indicates the following:

Balance at end of 1967 fiscal year	\$ 1,116,000
Balance at end of 1968 fiscal year	\$ 1,071,000
Balance at end of 1969 fiscal year	\$ 892,000
Balance to October 31, 1970	\$ 814,000

Estimated revenues for the 1971 fiscal year are as follows:

	Capital	Revenue
Gas well royalties	\$ 53,000	
Interest—on capital		\$ 62,000
--on revenue		6,800
Crop shares		25,000
Grazing leases		10,000
Oil permits		45,000
Military lease		65,000
City		200
Alpan		4,200
Pipeline row		600
Band loan repayments	1,000	
Totals	\$ 54,000	\$ 218,800

By comparison, the budget for the same year estimates expenditures as follows:

Capital	\$161,200
Revenue	\$168,360

It is obvious therefore that the Band's capital fund will continue to be depleted, unless action is taken to increase revenue and/or decrease expenditures.

SECTION IV — SOCIAL ANALYSIS

The social analysis and education sections of the Sarcee Study were the responsibility of Gordon Banta Associates Ltd. Mr. Banta was assisted by Mr. W. Bock in the area of education.

It must be noted that this portion of the study was completed in the early stages of the program, and there is some indication that attitudes indicated therein may have changed somewhat in the interim as a result of ongoing development processes.

INTRODUCTION

Sarcee is a small community made up of a few large family groups and some smaller family groups. Because they are the only Sarcee people, they have a long history of inter-marriage. Very few families on the Reserve are not related to most of the other Band members. Thus the Sarcee have all of the problems of any small community, plus those of inter-family conflicts.

There has been very little self initiated development on the Reserve due to lack of leadership and extremely poor communications between Council and Band members. In addition to this, the Band has received considerable revenue by leasing their natural resources. Thus the Band has been able to supply Band members with facilities that a non-Indian would usually expect to pay for himself. The total result is a small jealous community where the people expect the Band and Indian Affairs to supply their everyday needs.

POPULATION

The population of the Sarcee Band at the beginning of 1970 was 466. Of this number, approximately fifty-one (51) are living off the Reserve. In addition to Band members, there are about thirty-eight (38) non-Band members living on the Reserve. Many of these are women (and their children) who gave up Band membership by marrying non-Band members, and then returned to live on the Reserve. While the majority of people living on the Reserve are of Sarcee origin, there are at least forty-eight (48) who are not. These are mainly women born outside the Reserve who have married Sarcee men, and include fourteen (14) Blackfoot, thirteen (13) Cree, five (5) Stoney, one (1) Piegan, two (2) Sioux, six (6) Blood, and seven (7) white and metis.

The age-sex breakdown of the Sarcee population indicates that over 47% of the Band population is 14 years old or younger. This has obvious significance in terms of the requirements for educational and recreational planning and in terms of potential for future population growth.

RELIGION

There are two main religious faiths in the community; Roman Catholic and Anglican. Each of these churches claim to have roughly 50% of the Band members in their congregation and each church has a ladies' group. There is an increasing number of people, presently 41% of the households reporting, who express some degree of commitment to Indian religion.

WELFARE

Most of the Band members are satisfied with welfare as it is now administered by the Welfare Aide. Due to the lack of employment opportunities on the Reserve and in Calgary, there are some able bodied men receiving assistance. The difficulty of getting, and more important, of holding a job in Calgary is often due to a social pattern which will be referred to later as the "Welfare Game".

There is a small group of Band members who feel that welfare should be discontinued on the Reserve and replaced by constructive social development which will demand that the individual use his initiative to improve the community, unlike welfare which provides no initiative for improvement of either the conditions for the individual or the community as a whole.

At the time of writing there are approximately 233 Sarcees on welfare who receive a total of \$110,000 per year.

WELFARE GAME

The socio-economic phenomenon which we refer to as the "Welfare Game" is operative on the Sarcee Reserve as it is on many other reserves throughout Alberta. The Welfare Game is motivated by an attitude which makes people try to obtain as much as possible without any personal commitment in return. The game is played with any group, organization, or individual that has resources which Band members feel can be used to improve their own situation or to improve their position within the Band.

The total community must be involved in playing the Welfare Game. Individuals who deviate from the game by making a personal commitment to self initiated programs which will result in the substantial betterment of that individual's socio-economic position relative to the rest of the Band are soon held in disfavor by the rest of the community.

It is important to note that many Band members consider the Band Fund to be a legitimate source of funds

for the Welfare Game, with the result that they are busy trying to get all that they can out of their own Council. This has serious implications in terms of any development projects which are started on the Sarcee Reserve, in that initial planning must recognize the fact that some members will attempt to use the new projects in the traditional fashion.

EMPLOYMENT

With the exception of the Band staff positions, there are very few jobs on the Reserve that give full-time employment and foster good work habits and attitudes, and therefore any project which is started on the Reserve must have an initial training period planned into it.

During the year there is some work available at the Cow Camp and occasionally on fencing and cut lines. However, the work is only available for short periods and usually many more men are hired than are needed for the job. A majority of the male work force has worked in Calgary at one time or another, but most are soon back on the Reserve for one of the following reasons:

- a) Prejudice
- b) Lack of education
- c) Quit to work for a short time on the Reserve
- d) Drinking
- e) Lack of transportation
- f) Missing work for recreation
- g) Achieved a specific economic goal
- h) Domestic problems

At the time of this survey, there were only six people working off the Reserve full time. This includes those hired by Indian Affairs Branch doing educational work in the schools and on the Reserve.

HOUSING

A brief condition survey was done of houses existing on the Reserve, and houses were divided into four categories as follows:

Class I Houses in top condition and needing little repair work.

Class II Houses needing some repairs, usually to walls or doors.

Class III Houses needing major repairs, and

Class IV Houses judged to be uninhabitable.

Of fifty-nine (59) homes inspected, eight (8) were in Class I, eighteen (18) were in Class II, thirty (30) were in Class III and three (3) were in Class IV. All of the homes inspected had electricity, 54 had telephones and 40 had running water.

The average occupancy rate was one person per habitable room. Thirty-eight (38) homes had more than one person per room and six (6) homes had two or more persons per room. New house construction and housing repair accounts for 60% of the 1971-72 capital budget. Annual Revenue from house payments is in the order of \$14,000 per year, or some 14% of annual housing expenditures.

SOCIAL FACTORS

Goals

At the beginning of this study there was no concensus on any goals for the Band, but at the present time, as a result of the discussions and interaction which has been brought about by the study process, there appears to be a general enough concensus on developments goals to allow the formation of a Development Corporation with fairly specific instructions as to the type of development that this corporation should attempt to generate.

Motivation

The people of Sarcee are motivated toward different goals and have a different value system than the dominant white society. It is important that every Band member realize that he has the same common wants as other people, but his specific wants are learned as the sum of his experiences both on the Reserve and within the white society. No other people will have the same specific wants as the Band members, and no other people will try to achieve their wants in the same specific way.

For many years, the Band has not had any effective say in its own future. Everything has been decided for the Sarcee by people who have a different set of goals and a different set of values. Thus the Band has lost faith in their ability to establish their own goals and to regulate their activities accordingly. The Band now has the task of regaining their self confidence and this can only be done by doing things in their own manner and making them work. In order to do this, the Band must first of all decide what is in fact their own way of doing things and must then begin to undertake projects which will move them towards their goals. It is important that when undertaking their initial projects, the Band take ample time to work out a system which is suitable to them and which will work for future projects as well. In order to increase their self-confidence, it is important that the Band's initial projects be concluded successfully, and these initial projects should be chosen accordingly.

Leadership

The lack of leadership on the Sarcee Reserve has been a serious problem which is recognized by a large majority of Band members. There appear to be four prime reasons for the lack of effective leadership. Firstly, it is

only in the last few years that the Band has been called upon to make major decisions about its own future. Prior to this time, Indian Affairs officials had assumed the only effective leadership role, and thus the Band's decision making system broke down from lack of use. Young men entering leadership roles had no background of leadership experience to serve as a guide. Secondly, many Band members have no faith in their own elected leaders, and thus the leaders have little support from the Band membership. Thirdly, few Band members have sufficient educational background to carry out the leadership activities which are required on the Reserve, and, finally, leadership on the Reserve is hindered by a poor communications system on the Reserve which makes it almost impossible for leaders to get an indication of Band members wishes.

The Band membership and their leaders must realize that the future of their Reserve is at stake. The Sarcees are a minority Band of a minority group, and only through total community co-operation will they be able to achieve their goals.

Communications

There is no effective communications network on the Reserve. Information is normally exchanged only among family groups which are quite often closed systems, which means that the information moves only within the system. It is felt that communications can be improved by improvements in, and complete distribution of the "Newsletter," the encouragement of people to visit with their neighbors, and through the provision of an informal gathering place at a central location on the Reserve.

The communications problems which presently exist are combining to create an atmosphere of distrust on the Reserve. This atmosphere must be improved if community development projects on the Reserve are to be successful.

Social Organization

Social organization refers to the manner in which people group together, whether the purpose of the group is to solve a specific problem or simply to meet the challenge of every day living. The social organization on Sarcee is based on family relationships. Because the Band has such a small population which has been inter-marrying for several generations, nearly everyone is related in some way to everyone else. This feeling of inter-relatedness within the Band makes the Sarcee community much like one huge family. Such close relationships within the Band can be a very strong force if the members can establish, and start working towards, goals which they feel would be of benefit to everyone. Certainly the existing social organization will be able to function in a developing economy better than it has in the welfare economy since development is a positive process for the good of everyone, and enables a unified approach by the entire Band.

Sarcee Culture

Many Band members talk about retaining their culture and passing it on to the young people, but only a few people are making any effort to do this. In many homes where both parents speak some Sarcee, no effort is made to teach their children the language, and the young people are not particularly proud of being Sarcee because they do not know what this really means or what there is to be proud of. In addition, there is little to be found in the media to make a young person proud of being an Indian.

This places the student in a very difficult position, since he knows he is not white, but everything he learns about Indians shows that it is not good to be an Indian. This results in what is referred to as an identity crisis and is discussed further in the section on Education. If the Band members are really interested in keeping their culture, they must be willing to make some effort to do so.

Recreation

Recreation appears to be the only activity which the Sarcee people work together on. It brings different family groups together and helps to establish a feeling of community which is very badly needed on the Reserve. Recreation is similar to most other activities on the Reserve in that it does not have sufficient leadership or organization. A recreation director is essential, since the Reserve needs someone to co-ordinate and to organize recreational programs which will involve all Band members. In addition, it should be noted that Provincial grants are not available to a community that does not have a recreation director.

It appears that within the field of recreation lies the best potential for initial involvement of the Band members in the development program, since there is more interest in recreation than in any other activity. This viewpoint must of course be tempered by economic considerations.

Local Government

The Sarcee Band Council is having the same problem as many other Band Councils in Alberta. They have been given some responsibility and a little authority to administer certain parts of the Indian Act. Everything that they do must be in accordance with the Indian Act. The result is that most Band members look on the Council as a group with limited power whose primary function is to help them get aid from Indian Affairs and from Band funds. In other words, they are key men in the welfare game.

It would seem that Council has been reluctant to make any major decisions, for three basic reasons. First, they are politicians in a very small community which means they have to try and please everyone so they will

be re-elected. Often decisions which they know should be made are put off because it would turn a certain group against them. Secondly, because of very poor communications on the Reserve, the Council is not really sure what the people want. This is reinforced by the fact that very few people turn up at Band meetings. Thirdly, the Council has become involved with a lot of small details which are very time consuming, simply because they do not have overall policies for development and change.

The Council must recognize the fact that their main function should be to establish policies for development and administration of the Reserve. Once these policies are established and publicized, it will be much easier for the Councillors, Band staff, and most of all the Band members to have some idea of how the Council wants development to take place.

Band members, generally speaking, are not involved in local government. They do not attend Band meetings, and therefore they do not know what the individual Councillors think about problems on the Reserve, nor do they know how the individual Councillors want to solve the problems.

A major reason for non-participation in local government by Band members is the fact that Council meetings are closed to the public. At any time when people are not allowed to listen to the formulation of decisions which affect their lives, they become suspicious and fearful. Long before the Indians became involved with the white society, the Chief and Council used to discuss everything openly. There appears to be no valid reason why this cannot happen now, and it is therefore felt that Band Council meetings should be open to the public.

SECTION V — EDUCATION

Education of the Sarcee people probably represents the most fully advanced form of integrated education in Alberta. All children from the rural Reserve attend newer, modern, well equipped and staffed schools in southern Calgary. Even kindergarten children attend an integrated kindergarten. Only some adult classes are still held on the Reserve.

The last schools on the Reserve were closed in 1962. An arrangement for integrated education was made between the Department of Indian Affairs and the Calgary Public and Separate School Systems. Selected schools received all the children from the Reserve and located them in various class rooms, according to grade levels. This year approximately 200 children from the Sarcee Reserve attended two elementary, two junior high and two senior high schools in the city. No school has more than 45 children from the Reserve and no classroom has a majority of Indian children in it. All children receive the same basic instruction offered to other children in the schools.

Since the integrated approach to education is now in its eighth year, it is possible to make some observations about it. It must be recognized however that the following observations are to an extent generalizations, which in some cases should be substantiated by further study.

GENERAL OBSERVATIONS

There appears to be strong verbal support for education from the Sarcee people as a group. Most of the people believe that formal education is important, that it is necessary, and that their children should obtain at least a grade XII standing. Most of the people also seem to favour the integrated system of education because they believe that their children are receiving a better education in the city schools than they would in Reserve schools. It should be noted however, that only a small number of students are encouraged to go to University or College.

The most significant general observation forthcoming from this study is that there seems to be a process of progressive alienation from school, progressive educational retardation and growing frustration for a large number of Indian students. As they move from kindergarten through to high school, school appears to become less and less meaningful, they stay further and further behind and skip progressively more classes. While this is not true for all students, and it is also observed among other students, the percentage of students dropping out and making only failing marks is, for Sarcee students, abnormally high. One reason for this appears to be the

difficulty on the part of the student of finding a socially acceptable personal and group identity in the Calgary School system and in the community.

KINDERGARTEN OR PRE-SCHOOL EDUCATION

The pre-school kindergarten group appears to be the happiest and most well adjusted group of children attending any school outside the Reserve. The children of this group, about 20 in number, mix freely, play happily and participate fully in the kindergarten program. They are given many language and activity experiences which will prepare them for school. This appears to be an ideal setting for the beginning of integrated education. There appears to be only one basic problem at this stage. At this very early age these children should begin to identify something and someone from their own group, as part of their own culture. This could very easily and casually be introduced by the addition of a kindergarten aide from volunteers on the Reserve. It could also be introduced by participation of Indian mothers in hosting the kindergarten on a field trip and it could also be introduced by use of some Indian materials in the instructional program.

It is not quite sufficient to assume that children will respond equally by being treated alike. The important factor is to meet the needs of these Indian children, in addition to the needs of others.

The need for the beginning of a cultural identity suggested above is evidenced in part by a distinct pattern of decline in attendance, which dropped from an 88% average in September 1969 to a low of 64% in January, 1970. This is a pattern observed in every level during later schooling, and is in effect the small handwriting on the wall.

The achievement of success in social relations with classmates in the kindergarten is very important. If children can be consistently encouraged by both parents and teachers, a feeling of confidence is allowed to develop early which may overcome the many handicaps in later school years.

PRIMARY AND ELEMENTARY (GRADE I - VI)

Children in the primary grades appear to do very well in the first two years of schooling, in the regular school system. They work together, play together and notice very little difference between themselves and others. They appear very happy in spite of problems they may have in reading and language.

By the end of the second year the progress of these children appears to decline. Records show a marked de-

cline in grades IV to VI in some instances. It appears that children from the Reserve now begin to feel that they are different and must behave differently. They begin to think less and less of themselves and their ability.

By the end of the sixth year it becomes quite obvious that the Indian children group among themselves and work and play more and more with their own group. By this time, many of the children have failed at least one grade. They are beginning to ask serious questions about school, and there are frequent absences and truancies. The students who were good in grades I and II now fail. It appears that it is at this time when the critical formation of an identity has to be made. A cultural identity begins to be very important, in fact so important that many other problems may fade into the background.

In examining this problem, perhaps the Jewish example would be helpful. Jewish people have the problem of culture maintenance within their young people. They solve it by establishing a strong extra-curricular school after school hours for their children. Here the children are taught language, culture and religion. The Jewish children become bilingual and often receive a better education than their counterparts in school. It seems necessary that Indian children should receive this kind of training. It is not the training alone that would be important; it is the very emphasis upon a language and culture as a significant identity which makes it worthwhile of recognition that impresses a child. The history of minority races has always shown that they survived only where they valued their own culture sufficiently to teach it to their children.

Teachers in the Calgary School System appear to know very little about the Sarcee Reserve. Perhaps occasional invitations from the Reserve would help to bridge this gap. Communications between the people and the teachers should occur on a different basis from the formal atmosphere of the city. To create understanding there should be numerous contacts on an informal basis. This would approximate more the social contacts of a rural reserve rather than city impersonality.

From the foregoing, one can draw the following conclusions:

- a) Kindergarten children should be introduced to the elementary school periodically during their year of preparation to ease entry into the primary school.
- b) Homes need to provide an adequate reading or study space for elementary students.
- c) Parents should become much more familiar with the school program. Adult seminars could be held to acquaint the parents with the school program.

- d) The use of teacher aides should be extended more and more into the classrooms and into the homes after school hours. Itinerant teacher aides might visit homes of children in the evening for the special purpose of assisting them in their school work.
- e) The buddy system might be established in the schools so that more children can be assisted in the elementary school by other children in the school and, as the use of guidance councillors from the Sarcee people is excellent, it should be continued with great care and patience.

JUNIOR HIGH AND HIGH SCHOOL

This period of education appears to be the most critical for students from the Sarcee Reserve. Large numbers of boys have dropped out by the end of grade IX and almost no boys complete grade XII in the Calgary System. Almost without exception, the students in the Junior High School miss a lot of classes, enter only into the general program and do very poorly in their school work in comparison to the other students in the schools. Less than 1% of the students in the High School are on academic programs. This is not consistent with the indicated ability of students when they enter grade I. It is disappointing to note that the average marks of students in one Junior High were at least 15% below the class average and represented almost complete failure for the group. It is doubtful that this situation has come about in one year, but would appear to be the accumulative effect of missing school, skipping classes and falling behind in school work. While this is most regrettable, it is encouraging to see a growing number of students in the High School in comparison to previous years. It is also encouraging to see students take at least some active part in the affairs of the school. The most promising improvement is the introduction of Indian Guidance Assistants and teacher aides in the Calgary system. This has in fact brought about some very important improvements, most significant of which is improved attendance at school.

Some specific recommendations for improvement at this level are as follows:

- 1) Particular attention should be paid to the problem of the boys in the junior and senior high school. It should become important for them to attend school regularly and to achieve to the best of their ability. Course and vocational counselling should be done in close cooperation with fathers on the Reserve.
- 2) Parents should be aware of the problems faced by the students before they become of major proportions. Parents should be encouraged to visit the school as often as possible.

- 3) A very definite remedial program should be worked out between the school and parents for academically capable students. Follow-up work could be done by the guidance assistant.
- 4) There is real promise in the employment of Indian guidance assistants. Perhaps some should be hired by the Board during off hours to assist students who have particular difficulties.
- 5) It is noted that some students have been having difficulties at Lord Beaverbrook High School and have been transferring to Bishop Grandin High School because they feel that the separate school system is more sympathetic to the requirements of Indian students. This is not a general observation, but should be a matter for early investigation by the Sarcee school committee.

POST SCHOOL OR ADULT EDUCATION

Some of the problems confronting adults wishing further education are as follows:

- 1) Most adults do not have sufficient elementary education to take advanced courses.
- 2) Overcrowding conditions in the home may make study difficult.
- 3) The lack of books and magazines and newspapers and a library on the Reserve is very evident. Television and radio are readily available but do not offer an adequate opportunity for education.
- 4) Most courses offered to adults are offered off the Reserve. This makes transportation and family arrangements difficult.

- 5) Many people do not know what education is required to get and hold certain jobs. Much more explicit explanation would be helpful.

The following are some of the ways in which the foregoing problems may be alleviated:

- 1) Adult education and training should be closely related to the projects in which people are really interested.
- 2) A systematic program of films, video-tapes and field trips might be combined to make a very interesting adult program. Transportation might be arranged with the Band Council.
- 3) A thorough analysis of adult education needs should be done by the people on the Reserve. They should be entirely responsible for any arrangements including the hiring of teachers and assistants.
- 4) An adult education center which has been started on the Reserve should be expanded, perhaps with a few smaller centers being established.
- 5) Band members should feel a sense of achievement and recognition for improvement in education and work. Some kind of internal reward system in the form of recognition or salary upgrading might be helpful.

Some difficulties will be encountered in the establishment of new programs, but it seems worthwhile to attempt a change with the assistance of the Band. Unless problems and difficulties are discussed freely, it will be difficult to make any progress. With the input of considerable interest and effort which appears to be potentially available, the Reserve people can look forward to very substantial progress.

SECTION VI — AGRICULTURE AND FORESTRY

The agriculture and forestry section of this study was the responsibility of Farm and Ranch Management Consultants Ltd., and the work was carried out by Jim Lore, Doug Allen and Larry Baird.

PHYSICAL CHARACTERISTICS OF THE SARCEE RESERVE PERTAINING TO AGRICULTURE

Agricultural Land Capability Rating

The land capability ratings on the Sarcee Reserve are reported on the Canada Land Inventory (CLI) scale. The arable land in this scale ranges from No. 2 to No. 4 (No. 1 is excellent). There is very little No. 2 land on the Reserve and all of it is located at the east end. The rest of the arable land is subject to frost or is wet or both and so ranks lower than No. 2.

Rainfall

Rainfall varies from about 17 inches annually in the east township to about 18 to 19 inches annually in the central township to about 24 inches on the west side of the west township.

Frost Free Days

Frost is a hazard to crop production on most of the Reserve. The east side of the Reserve has 90 to 100 frost free days, decreasing to 60 or less on the west side.

Forest Cover

There is a limited amount of commercial timber on the Reserve at the present time. The forests have been harvested in such a way as to leave a low density of suitable trees that is uneconomic to harvest for sawmill operation. There is considerable poplar and willow cover on the west end.

Cultivated Land

An inventory revealed about 9,700 acres of cultivated land on the Reserve. Most of this land is located in areas of "90 days frost free period" or less.

INTRODUCTION TO PHYSICAL RESOURCE DEVELOPMENT INCLUDING AGRICULTURE, FORESTRY, WILDLIFE AND AGRICULTURAL RECREATION

In assessing the physical resources on the Sarcee Reserve and analysing the economic potential, it is necessary to consider the desires of the people. If the desire to accomplish an agricultural development is strong, it is possible to learn the husbandry and management techniques. If the desire is absent, the project will fail. Therefore, the only projects that are considered to be possible are those which were recommended at the Banff Conference.

However, in keeping with the Terms of Reference, most other possibilities have been analysed from management and economic standpoints, excepting those which were very specialized and where no interest whatsoever was expressed by any Band member.

In assessing the potential return from any proposed project, it is necessary to assess the proposed operating management. Primarily, management must assess its position as regards markets, and secondly, as regards production technology. The market assessment is most important since there is little point in efficiently producing a product that cannot be sold. Agricultural managers have, in the past, been more concerned about production, and less concerned about marketing. Some of the projects proposed have been discounted in this study because of the difficulty in finding markets. Since the Sarcee people have not had much experience in management, it is not realistic to expect success in an enterprise where marketing is difficult. Further, good marketing advice for some of the projects is costly, and is a business in itself. This study will deal only in general terms with projects where marketing management is difficult.

The enterprises that have potential for the Sarcee people at the present time are analysed to give a complete picture of the dollar investment required, the use of land, the number of people employed and the returns to both the Band and the Indian operators.

PHYSICAL RESOURCE DEVELOPMENT — AGRICULTURE, FORESTRY, WILDLIFE, AGRICULTURAL RECREATION

Overview of Land Resources for Agriculture and Forestry

An examination of the soils maps, climatic data, topography, vegetation and present land use indicated the following:

The Sarcee Reserve Land has a capability of producing forage crops, grain, native forage, trees, wildlife, and has potential for outdoor recreation. Although there is some good soil, the climate (resulting from its elevation) is such that the growing season is not long enough for cereal crops nor most other farm crops except short season crops such as oats, barley and hay.

Over half of the area is too steeply rolling to be cultivated successfully and is more suitable to wildland development. This land will yield grazing, forest products and wild game, and presents a topography suitable for outdoor recreation such as hunting, snowmobiling and

trail riding. The entire Reserve is "good" to "excellent" for a cattle and horse range.

On the rest of the Reserve the greatest land potential is for raising livestock and under present circumstances, mostly cattle, or sheep. Some horses will fit into the picture and possibly the sale of some hay and feed grain. The wildland, besides supplying the summer pasture for livestock will produce some deer and elk for hunters, some wood products, and an area where outdoor recreation of a dispersed type might be developed (trail riding in summer and snow vehicle runs in winter are examples).

Land Management

Land tenure and operation of the enterprises may be by individuals (families) or on a communal or cooperative basis through the Band. Before detailed development and operational planning is done it will be necessary to determine which basis is to be applied.

The basic principle is one of integrated land use. The wildland at the west end of the Reserve lends itself to use as summer range for the cattle (and horses) which will be wintered on the stubble close to the homes of the owners where there is shelter, tame pasture, and winter feed. The two types of land supplement each other, but summer range and wintering facilities must be in balance. The two kinds of land may be integrated in several other ways. The rough hilly land offers a place for trail riding for a saddle horse outfit located on the east end of the Reserve near the city. The rancher who has extra family labour might undertake to cut logs for the sawmill during the winter season. Deer and elk might be managed for the hunting pleasure of the Band and as a food supply.

The various uses of rough non-arable land lend themselves well to integrated management. The range for domestic livestock, the game range, lumber and wood production and outdoor recreation can all be integrated. In many cases the same acre of land will serve all four purposes. Take for example the mixed spruce-aspen forested areas which are now growing white spruce trees suitable for saw logs. Deer seek shelter there and browse the shrubs and leafy undergrowth. Cattle use the grassy openings and winter snowmobile cruising favors these areas.

The topography and plant cover is varied and various kinds of land management need to be applied. The land responds well to the clearing of forest cover giving high producing pasturage. However the land suited to producing spruce saw-logs and the very steep slopes should not be cleared. The saw-logs will give good returns and the steep slopes may erode if cultivated. Both the wooded slopes and the forested glades with open grazing between, create the ideal habitat for deer and elk and a suitable environment for outdoor recreation.

An integrated plan of management for the rough land would include:

- 1) Clearing of probably half the land and converting it to high producing grassland.
- 2) Managing the best spruce and pine sites for timber and Christmas trees.
- 3) Manage the area for deer and elk herds of a size which the winter range will carry. A suitably sized game herd can live complementary to the cattle grazing on the range.
- 4) Give consideration to outdoor recreation which will fit in with grazing of domestic livestock and lumbering.
- 5) Make the total production of various goods and services serve the needs of the Sarcee community.

The production of sufficient summer range to meet the needs of cattle herds elsewhere would be the major undertaking and would have priority over other projects.

Conservation

Conservation includes both the maintaining of the renewable land resources for future generations and the maintaining of the quality of the environment through the control of air, soil and water pollution. This cannot be treated separately as a project but should be part of any developmental plan. It will play an important part of any detailed program.

Some dangers inherent in the land uses suggested in the wildland are:

- 1) Soil erosion with indiscriminate clearing and breaking;
- 2) Siltation of streams;
- 3) Depletion of wildlife population;
- 4) Soil and water pollution if outdoor recreation becomes intensive;
- 5) Noise pollution if motor snow vehicles are used, and,
- 6) Too much clearing changing wildlife habitat and lowering aesthetic values.

CONSIDERATION OF SPECIFIC ENTERPRISES ON THE SARCEE RESERVE LOGGING

This enterprise is now carried on, on a limited scale, with as many as 25 Sarcee people employed for a short time in winter.

Bruce Starlight, who now does some logging, expressed interest in a lumbering project and undertook to gather some information on the activities as now carried on. The information which he gathered forms part of the following.

For quite a number of years Sarcee people have cut logs and sold them to lumber mill operators. Gordon Runge, a neighboring rancher has operated a small portable saw mill on the Reserve since 1950 and purchases his logs from the Sarcee people. He buys trees from the crews of native people who fall and lop them. The operator skids them to the mill and pays the Indian fallers \$20 per thousand feet board measure (f.b.m.) or rough lumber which their logs yield. The fallers are organized in crews and each crew contracts with the operator. Runge also hires Sarcee people as his mill hands.

Over the last 5 years this mill has sawn between 150,000 and 200,000 board feet of lumber per year. This has yielded about \$3,000 to \$4,000 per year to the Indian fallers and an equal amount to the mill hands. The operator pays stumpage to the Band. The rate varies but is about \$6 per thousand at present. The return to the Band has been about \$900 to \$1,200 per year from this mill.

One other operator is buying logs off the Reserve; Robert McClellan of Bragg Creek. The falling crew falls the trees, lops the limbs and skids the logs out to a landing where the purchaser scales the logs. He then hauls them to his mill at Bragg Creek.

His purchases are less than those by Gordon Runge, not exceeding on the average, 75,000 board feet per year. He pays for his logs skidded to the landing at a price about comparable to the \$20 per thousand board feet in the bush. This would return \$1,500 per year to the falling crew and about \$450 to the Band for stumpage.

Prospect of a Mill Operation by the Band or an Individual

The feasibility of the Band or an individual Sarcee purchasing and operating a sawmill as a business was considered under the following headings:

- a) **Mill availability:** Runge would sell his mill and planer for \$12,000. Besides the mill, a tractor for skidding (Cat. D4 \$8,000) and a truck (3-4 ton \$7,000) for hauling are needed.
- b) **Source of Material:** The best of the saw timber is gone. What is left is scattered and a regular inventory would be necessary to determine if a sustained yield is possible. It is estimated that growing stock is such that about 200,000 board feet could be cut each year on a sustained yield basis.
- c) The Band Council should hire a Forest Ranger to supervise the use of the forested area. One of the Band members could be trained to take over these duties. Such office could be made part of the duties of the constable on the Reserve.

A Forest Ranger could also "timber cruise" the

Reserve and get an accurate inventory of the timber. His duties would be to enforce orderly cutting of timber, Christmas tree harvesting, ornamental tree harvesting and reforestation.

The Band Council must set the policy regarding the management of forests, with expert consultation, to ensure continual regrowth.

- d) **Market:** Rough lumber of the kind produced sells for \$65 per thousand.

Conclusions

A 200,000 board feet mill operation would not be practical except as a side line. Small mills are operating very marginally. The saw mill could be used as a side line for one of the Sarcee people or the Band. It may be better to let an experienced operator own and run the mill and local people supply the timber, or to hire an experienced sawyer, until the local people gain the necessary skills.

ECONOMICS OF A LUMBER MILL ON THE SARCEE RESERVE

Capital Investment

Purchase of saw and planer mill	\$ 12,000
Purchase of used D4 Cat and truck	15,000
	<u>\$ 27,000</u>

Expected Annual Revenue

Sales of 200M board feet @ \$65/M	= \$ 13,000
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Estimated Annual Costs

Capital Costs:

\$27,000 @ 9% interest	= \$ 2,430
27,000 @ 15% depreciation	= 4,050

6,480

Operating Costs:

Repairs: \$27,000 @ 10%	= \$ 2,700
Fuel	= 600
Faller's wages: \$20/M × 200M	= 4,000
Stumpage: \$6/M × 200M	= 1,200
Saw mill hands: 10 months × \$350	= 3,500
	12,000
Total Cost	<u>\$ 18,480</u>
Net Loss to Operator	<u>\$ 5,480</u>
Returns to Band	<u>\$ 1,200</u>

If this enterprise is to continue it will be necessary for some management to be applied to growing the wood and some regulation as to cutting. With the method now used, the best timber will soon be gone with only the poorer trees and scattered timber left. This timber will be uneconomical to cut by itself. There will need to be some forest management applied to get full production, including the following tasks:

- 1) Take an inventory of growing stock including a determination of growth rate. (Growth rate in the trees observed is good. The logs being cut range from about 85 to 150 years old.)
- 2) Cutting trees and treating land so as to get natural reproduction.
- 3) Reforestation.
- 4) Regulating cut in an orderly fashion so as to maintain an annual cut.
- 5) Control cutting of Christmas trees and digging of planting stock so as to leave the trees which will grow into saw logs.

The Band Forest Ranger would oversee the above points.

ECONOMICS OF AN INDIAN CUTTING OPERATION TO SERVE A FIBREBOARD PLANT

(Assuming Year Round Operating of Plant)

Capital Investment

Saw	\$ 200
Front end loader tractor (used)	3,000
	<hr/>
	\$ 3,200

Expected Annual Revenue

200 days @ 3 cords/day \times \$12/cord	= 7,200
---	---------

Estimated Annual Costs

Capital Costs:

\$3,200 \times 9% interest	\$ 288
\$3,200 \times 15% depreciation	480
	<hr/>
	768

Operating Costs:

Fuel: 200 days of cutting	\$ 100
Repairs: \$200 \times 10%	20
Stumpage to Band: \$2 \times 600 cords	1,200
Delivery: (40 miles @ \$2/ton)	
Cost of delivery per cord \$2.50 \times 600 cords	1,500
	<hr/>
	2,820

Total Cost

Returns to Operator	\$ 3,588
	<hr/>
Returns to Band	\$ 1,200

Christmas Trees

The cutting and selling of Christmas trees is on much the same basis as firewood, and so exact quantities sold are unknown. The Indians estimate that 300 pine and

Fireplace Wood

Fireplace wood is now being sold off the Reserve but the amount, kind, and price is impossible to determine because many people sell small amounts to various purchasers.

Wood for Fibre Board

I. & G. Machine and Fibre Ltd., 15th Street and 42nd Avenue S.E. in Calgary will purchase green wood (poplar, pine and spruce) for the manufacture of fibre board. No wood is being purchased at the present time but they expect to start up in February or early March. The operation has been irregular but the owners are optimistic.

They require 50-100 cords per week and will pay \$10-\$12 a cord delivered to the factory (2,500 pounds green weight per cord). Wood must be cut into 4 foot bolts with a diameter of 5 inches - 10 inches.

They have purchased wood from Starlight family and George Runner.

900 spruce Christmas trees (all native, uncultured) were sold. Most were sold to dealers but some were sold at retail. The prices reported (wholesale) ranged from 50¢ to \$1. Some were cut for an outfit in Saskatoon.

Supposing 1,000 trees were sold each year at 75¢, this gives only \$750 gross which is merely pocket money for two or three people. With present methods of cutting and selling wild trees, it is doubtful if the business could be expanded. The sale of artificial trees and trees that have been pruned and shorn to make them more attractive is increasing each year. Furthermore it is doubtful if more than 1,000 trees can be cut each year without depleting the supply. It is likely that the demand and hence the price of wild trees will decrease until it is not practical.

The only prospect in the Christmas tree business is in growing and culturing trees. Because of the danger of "Chinook burning" in this area the Christmas tree business is very risky. "Chinook burning" is caused by trees drying out in wintertime.

Trees for Transplanting

There has also been a market for native trees for transplanting as ornamentals around city dwellings. No reliable estimate could be made of the number sold but one Indian is reported to have sold 1,000 last spring.

The unregulated digging of young trees for transplanting and the cutting of Christmas trees would result in the depletion of the forest and the supply of saleable stock would be gone. It would also interfere with reproduction of saw log timber. Only if regulated and tied in with a forest management program should digging or cutting of young trees be allowed. The Sarcee Reserve would be ready for such a program only after setting a Band policy and training a Forest Ranger.

Tree Farm

Tree farming to grow trees for transplanting or for Christmas trees has possibilities. However this enterprise would require adaptability to the kind of work, training, and managerial ability. None of the people were interested in this kind of enterprise and no one expressed sufficient interest to gather data on it or go to observe tree farms.

Sod Farms

This enterprise requires even greater skill, more meticulous management and business acumen than tree farming. It is a very competitive business at present. It is doubtful if the enterprise is suited to Sarcee people and none expressed real interest.

The above projects were not analyzed in sufficient depth to indicate their economic returns.

GRAZING RESOURCE ANALYSIS

Community Pasture

The cooperative approach for managing the rough multiple-use land seems to offer advantages. Since a community pasture is now planned with P.F.R.A. to cover part of the rough land at the west end, this concept is

assumed to be acceptable to the Sarcee people. The establishment of a community pasture over the non-arable land in the west townships (and possibly on Bullhead Hill when the Army lease terminates) would serve as an excellent starting point to build up a thriving ranching and farming industry. The ultimate goal would be to have most of the arable land producing winter feed as hay, grain and winter pasture for the herds which would run in the community pasture or on individually operated summer range. (See mixed farming section.) With no range improvement about 1,600 head of cattle could be summered. With range improvement and good management this could be increased to 3,500 head. This is a very conservative figure and could approach 5,000 head with top management.

P.F.R.A. Pasture

Of a total of 5,400 acres, the plan is to fence the area and clear, break, and seed 3,000 acres to high producing forage crops. The schedule is roughly as follows:

- 1970: Line cutting and clearing 2,200 acres
- 1971: Breaking and seeding 2,000 acres, et cetera
- 1972: Breaking 1,000 acres
- 1973: Spraying all cleared areas (2,200 acres).

The PFRA's calculated carrying capacity of its pasture is 800 head to begin with and 1,700 head after pasture improvement (all figures for a six month season). In terms of "acres per cow month" and "acres per cow year", 800 head equals 1.1 acres per cow month or 13.2 acres per cow year.

The above carrying capacity is too high. By way of contrast the Alberta Department of Municipal Affairs grazing capacity figures (used in assessing land) when applied to the kind of land found in the pasture are as follows:

Rough fescue grassland with $\frac{1}{3}$ willow or poplar: 32 acres per head per year or 2.7 acres per cow month.

Heavily wooded land: 60 acres per head per year or 5 acres per cow month.

Although the Municipal Department figures are quite conservative, they are more reasonable than those used by the PFRA.

The following is recommended as a carrying capacity:

Unimproved Land: 200 head
Improved Land: 800 head

Proposed Enlarged Sarcee Butte Pasture

This area includes all the land in the west township south of the Bragg Creek road and that in the middle township above an elevation of about 4,100 feet. It contains about 20,000 acres.

1. Estimate of Grazing Capacity (Unimproved)

Range Type	% of Area	Acreage (acres)	Acres per Cow Mo.	Cow Month	Head per 6 months
Range Grass	20	4,000	2	2,000	333
Usable Muskeg	3	600	2.5	240	40
Non-usable Muskeg	1	200	0	—	—
Woodland	36	7,200	3.3	2,182	364
Dense Poplar	20	4,000	8	500	83
Conifer and Poplar	20	4,000	10	400	67
TOTAL	100	20,000		5,322	887

As a round number, **900 head** could be grazed for a six month season.

2. Estimate of Grazing Capacity After Improvement

Range Type	% of Area	Acreage (acres)	Acres per Cow Mo.	Cow Month	Head per 6 months
Range Grass	20	4,000	2.0	2,000	333
Muskeg	3	600	2.5	240	40
Improved	50	10,000	1.0	10,000	1,667
Woodland	15	3,000	3.3	909	152
Timber	12	2,400	10.0	240	40
TOTAL	100	20,000		13,389	2,232

As a round number, **2,250 head** could be grazed for a six month season.

3. Proposed Bullhead Pasture (Unimproved)

Range Type	% of Area	Acreage (acres)	Acres per Cow Mo.	Cow Month	Head per 6 months
Grass and Meadow	45	2,250	2.0	1,125	188
Open Poplar	5	250	2.5	100	17
Willow	40	2,000	3.0	667	111
Spruce Poplar	10	500	1.0	50	8
TOTAL	100	5,000		1,942	324

As a round number, **350 head** could be grazed for a six month season.

4. Proposed Bullhead Pasture (Improved)

Range Type	% of Area	Acreage (acres)	Acres per Cow Mo.	Cow Month	Head per 6 months
Range Grass	45	2,250	2.0	1,125	188
Poplar improved	5	250	1.0	250	42
Willow	10	500	5.0	100	17
Willow improved	30	1,500	1.0	1,500	250
Spruce Poplar	10	500	10.0	50	8
TOTAL	100	5,000		3,025	505

As a round number, **500 head** could be grazed for a six month season.

Some of the Bullhead pasture is suitable for cultivation. These calculations are done assuming no cultivation excepting that for pasture improvement. When the Army lease expires, or if the Band has improved the rest of the

Reserve, and wishes to expand its agricultural operations further, the Bullhead military lease land improvement should receive detailed planning in the light of land use and improvement techniques relevant at that time.

Other Summer Grazing

There is other summer grazing that will probably be used by individuals. It is estimated by subtracting estimates of land used for other purposes.

	Acres
Total Area	68,850
Less Sarcee Butte Pasture	20,000
	<hr/>
Less Bullhead Pasture	48,850
	5,000
	<hr/>
Less crop and hay	43,850
	9,300
	<hr/>
Less other development	34,550
	3,850
	<hr/>
Less winter grazing	30,700
	20,000
	<hr/>
Remaining: Other Summer Grazing	10,700
	<hr/>

This additional land has a grazing capacity of **550 head** for a six month season.

Total Grazing Capacity Before Pasture Improvements

Sarcee Butte Pasture	900 head for six month season
Bullhead Pasture	350 head for six month season
Other Summer Range	550 head for six month season
	<hr/>
	1,800 head for six month season
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Total Grazing Capacity After Pasture Improvement

Sarcee Butte Pasture	2,250 head for six month season
Bullhead Pasture	500 head for six month season
Other Summer Range (not improved)	550 head for six month season
	<hr/>
	3,300 head for six month season
	<hr/>

As a round figure 3,300 head could be grazed for a six month season.

If superior management, including working up pastures on a rotation basis and using fertilizer were utilized, the capacity could easily be extended to **5,000 head**.

In the foregoing, 20,000 acres have been subtracted for winter grazing. This amount may not be required if farm pastures, hay land and crop aftermath are used to good advantage. At present, cattle on the Sarcee are being fed hay in feedlots even though there is grass available to them. The development of good winter range and making use of it would reduce costs and probably increase the vigor and health of the cow herd.

Manpower Training

Under the PFRA Agreement, Indian pasture riders will be used. There is an opportunity to train Band members in pasture management and community pasture management. The Band Council should set the policy for pasture use on the Reserve. The Band Range Manager, back-stopped with the necessary technical advice, should supervise the use of Reserve pastures to ensure long productivity of all grazing areas on the Reserve. The Band Range Manager can be paid from pasture rentals paid to the Band by pasture users.

FORAGE OPERATIONS

The Market

Baled hay is in market competition with grains, because these feeds can be substituted to some extent. Because the present grain market is under pressure, the hay market is also affected. However, there is generally a good market for sale of high quality pure alfalfa hay to the dairy trade.

Alsike clover is another legume for which there is some market, although it is not in as broad demand as pure alfalfa. For low areas, subject to prolonged flooding, it is suitable.

A brome/alfalfa mixture will yield more than a pure stand of either brome or alfalfa. However, the market for this hay is narrower, and the price is usually less. A mixture does cure easier and is easier to bale.

It is important that the operator understand the methods of making a high quality hay. The methods and reasons are explained in Appendix III.

Husbandry of Alfalfa — see Appendix III

Harvesting Equipment and Cost (new)

40 HP Tractor with live power take-off	\$ 6,000
9 foot power mower	900
Side delivery rake	800
Hay conditioner	1,700
	<hr/>
Baler	\$ 9,400
Automatic stoker	3,000
Front end loader	600
Bale wagon	1,000
	<hr/>
	4,000
	<hr/>
	\$ 18,000

Storage Sheds

A roof is important for bale storage. It is very difficult to protect bales from rain with anything but a permanent roof. If the hay is to be sold, storage will pay for itself many times over. The investment cost is about \$6 per ton.

The Returns and Employment Opportunities on a 500 Acre Hay Operation

(i) Estimated Capital Investment	\$18,000
(ii) Estimated Annual Revenue	
Sale of hay: 1,000 tons \times \$22/ton	22,000
(iii) Estimated Annual Costs	
Capital Costs:	
\$18,000 \times 9% interest	\$ 1,620
\$18,000 \times 15% depreciation	2,700
	4,320
Operating Costs:	
Repairs and service	\$ 1,800
Fuel and twine	1,000
Hired labor (2 men for 1 month)	1,000
Custom work —	
100 acres @ \$12/acre	1,200
Fertilizer	4,250
Spray, incidentals, and interest	1,500
	10,750
Total Costs	\$ 15,070

(iv) Forecast Profit and Loss Statement

Estimated Annual Revenue from hay sales	\$ 22,000
Estimated Annual Operating Costs	15,070

Returns to land and operator	\$ 6,930
Land rent @ \$6/acre (Band returns)	3,000

Net Profit to Operator	\$ 3,930

GRAIN AND OIL SEED CROPS

Grain and oil seed crops will be dealt with together since the problems and markets of one are closely associated with the other. At the present time the markets are very depressed, particularly in cereal grains.

Markets

In cereal grains there are two distinct markets. One is through the Canadian Wheat Board. This grain is used for human consumption, such as wheat for milling or barley for malting. Any grain moving across provincial or national boundaries must move through the Canadian Wheat Board. Prices are made by an initial payment to producers when delivery is made. If at the end of the crop year, after all Wheat Board expenses have been paid, there is money left, it is paid to producers in the form of a final payment. The final payment is based on the number of bushels that a producer has delivered. This market is limited, and the amount each producer can sell is determined by a quota system. However, the price is usually better than that offered in local feed markets.

The second market is the local feed trade. This is grain sold within the Province from farms to feedlots. It is open to any producer to sell all he wants at a negotiated price between seller and buyer. At the present time, this price is below cost of production.

The oil seed market, principally rape seed, is used for the vegetable oil trade, that is cooking oils, margarine and others. This market is variable because the total Canadian production is a small part of world production. The outlook is fairly good for this crop, but the price is influenced by the world trade, and it is very difficult to forecast.

Husbandry of Grain and Oil Seed Crops — see Appendix III

Returns and Employment Opportunities on a Basic 600 Acre Grain Farm

(i) Estimated Capital Investment

This equipment list is based on the purchase price of good used equipment.

1 Tractor 90-100 H.P., 3-5 years old	\$ 5,000
1 Grain auger, 3 years old	200
1 Cultivator, 16 foot, 3-5 years old	500
1 Drill (double disc or hoe) complete with fertilizer attachment, 3-8 years old	700
1 Rod weeder, 24 foot, 5 years old	600
1 Set harrows and drawbar, 40 foot, with 10 inch teeth	1,000
1 Self-propelled swather with spray attachment, 3-5 years old	1,500
1 Truck, 2-3 ton, 10 years old, with box and hoist	1,000
1 Combine (power take-off, 40 inch cylinder)	2,500
Tools, welder and shop equipment	600
Total equipment investment	\$ 13,600

500 acres of crop will require storage for 20,000 bushels.	
$20,000 \times 25\text{¢}$ per bushel	5,000
Total equipment and storage investment	<u><u>\$ 18,600</u></u>

(ii) Estimated Annual Output

400 acres in barley @ 50 bu./acre =	20,000 bu.
100 acres in rape @ 20 bu./acre =	2,000 bu.

(iii) Estimated Annual Operating Costs

Fertilizer (anhydrous ammonia):

400 acres \times 75 lbs. = 30,000 lbs. or	15 tons
100 acres \times 20 lbs. = 2,000 lbs. or	1 ton
	—
\$145 \times 16 tons of fertilizer =	16 tons

Fertilizer (11-48-0)

500 acres \times 70 lbs. = 35,000 lbs.	
or 17.5 tons \times \$95 per ton =	1,663
Spray 500 acres \times \$1.00 =	500

Total fertilizer and chemicals	\$ 4,483
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Depreciation of equipment at 15%	\$ 2,040
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Depreciation of storage at 5%	250
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Fuel	1,500
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Repairs \$13,600 \times 10% =	1,360
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Seed 500 acres \times \$2 =	1,000
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Labor — no hired labor required if 2 men operate unit.	
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Insurance	400
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Operating Costs not including interest and rent	
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Interest on capital:	
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\$18,600 at 9% = \$ 1,674	
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\$ 8,343 at 9% = 751	2,425
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\$ 13,458

(iv) Forecast Profit and Loss Statement

Revenue

20,000 bu. barley @ 80¢ per bu. =	\$ 16,000
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20,000 bu. barley @ 50¢ per bu. =	\$ 10,000
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2,000 bu. rape @ \$2 =	4,000
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\$ 14,000 \$ 20,000

Less Annual Cost	13,458
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Returns to Band (\$6/acre rent)	3,600
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3,600 3,600

Returns to labor and management for 2 families	
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(\$ 3,058) \$ 2,942

Returns have been calculated on the basis of present barley prices (50¢ per bushel), and average feed prices on the farm (80-85¢ per bushel). It is apparent that returns are borderline when averages are used and returns negative when present prices are used. Moreover, equipment costs for this size of operation have been calculated at the lowest level considered possible. These figures point out the difficulty of operating a straight grain operation.

If the Band decided to rent the land on a crop share arrangement, the returns would be as follows:

	50¢ bushel	80¢ bushel
Total Income	\$ 14,000	\$ 20,000
Less cost other than rent	11,168	11,168
	<hr/>	<hr/>
	\$ 2,832	\$ 8,832
Less $\frac{1}{3}$ rent (returns to Band)	4,667	6,667
Returns to labor (2 families)	<hr/> (\$ 1,835)	<hr/> \$ 2,165

COW-CALF OPERATION

The Sarcee Reserve is located in an area well suited to cattle. The rainfall is adequate for good grass growth and the west end of the Reserve is well suited to community pasture development. The estimates of carrying capacity on the Reserve, not considering the present military lease but assuming the completion of the PFRA pasture, will be about 2,850 head for a six month period. This also allows 20,000 acres for winter pasture, which would carry this herd for another two months. This would leave four months to feed the herd.

Herd requirements and rations will be found in Appendix III. Therefore this section will deal with the feed, capital, and labor requirements of a 500 head herd and estimate the returns from such an enterprise.

Returns and Employment Opportunities on a Basic 500 Head Cow-Calf Operation

(i) Estimated Capital Investment

Livestock

500 cows at \$300	=	\$ 150,000
20 bulls at \$500	=	<u>10,000</u>
		\$ 160,000

Equipment

Corrals and equipment

Tractor and loader	\$ 6,000
Wagons and feeding equipment	3,000
Augers and bins	2,000
Corrals, chutes, squeezes, pumps and watering equipment	10,000
Hay sheds	5,000
	<hr/>
	\$ 26,000

(ii) Estimated Annual Operating Revenue

	85% calf crop	90% calf crop
500 cows	425 calves	450 calves
Average weaning weight heifers		400 pounds
Average weaning weight steers		450 pounds
1969 Prices: heifers	30¢	
steers	36¢	
cull cows	18¢	(cows are culled by 100 head per year)

Sales

102* heifers \times 400 lbs \times 30¢	=	\$ 12,240
213 steers \times 450 lbs. \times 36¢	=	34,506
100 cows \times 1,000 lbs. \times 18¢	=	18,000
TOTAL SALES		\$ 64,746

* 212 heifers less 110 replacement stock (assuming 2% cow loss)

(iii) Estimated Annual Operating Costs

(a) Feed Requirements

Winter Pasture charge:		
520 × 60 days × 6¢	=	\$ 1,872
Summer Pasture charge: (PFRA)		
520 × 180 days × 6¢	=	5,616
2 Tons/head × 520 =		
1,040 tons × \$20	=	20,800
4 bu. grain × 520 =		
2,080 bu. × 50¢	=	1,040
Mineral, supplement, etc.		
\$1.50 × 520	=	780
		<hr/>
		\$ 30,108

(b) Vet, medicine and other costs including rent of winter camp:

$$\$10 \times 520 = \$5,200$$

(c) Interest on Capital

$$\begin{array}{rcl} \$160,000 \times 9\% & = & 14,400 \\ \$ 26,000 \times 9\% & = & 2,340 \end{array}$$

(d) Depreciation on Equipment

$$\begin{array}{rcl} \$ 26,000 \times 10\% & = & 2,600 \\ & & \hline & & \$ 54,648 \end{array}$$

(iv) **Forecast Profit and Loss Statement**

Total sales	\$ 64,746
Total costs	54,648
Returns to Labor (3 men)	\$ 10,098
Returns per man:	\$ 3,366

(v) Alternative Profit and Loss Statements

(a) If a price drop is considered and the following prices (1968) are used:

25¢ for heifers,
30¢ for steers,
15¢ for cows,

the returns are as follows:

Sales: 102 × 400 × 25¢	=	\$ 10,200
213 × 450 × 30¢	=	28,755
100 × 1,000 × 15¢	=	15,000
		<hr/>
		\$ 53,955
Less Operating Cost		54,648
Returns to Labor (3 men)		<u><u>(\$ 693)</u></u>

(b) The last 7 year average prices are as follows:

21¢ for heifer calves,
28¢ for steer calves,
15¢ for cull cows,

the returns then are as follows:

Sales: 102 × 400 × 21¢	=	\$ 8,568
213 × 450 × 28¢	=	26,838
100 × 1,000 × 15¢	=	15,000
		<hr/>
		\$ 50,406
Less Operating Cost		54,648
Returns to Labor (3 men)		<u><u>(\$ 4,242)</u></u>

(vi) Returns to the Band

Pasture rent other than PFRA	\$ 1,872
1/3 pasture rent of PFRA	1,872
Rent of winter camp, 50 acres × \$6	= 300
	<hr/>
	\$ 4,044

Note that this operation will dovetail with the haying operation. The peak labor loads of the haying operation will coincide with times of relative slack labor demand on

the cow-calf operation, so that very little extra labor would be required. The hay aftermath would also provide excellent cheap winter pasture.

MIXED FARMING

This proposal uses a 100 cow herd and a 100 head feedlot, plus farming 700 acres. It uses a community pasture for the summer pasturing of the cows. This proposal is based on the theory that economic returns from agriculture in the area of Alberta in which the Sarcee Reserve lies is dependent on the decreased costs and more efficient

use of labor and equipment which a mixed farming operation allows.

This operation proposes to use Sweet Clover silage as the forage and grow barley and alfalfa hay. The machinery investment and inventory would be the same as outlined in the grain section, with some additions.

(i) Estimated Capital Investment

(a) Total equipment for farming	\$ 13,600
1 Forage harvester	1,500
1 Front end loader	500

	\$ 15,600
(b) Livestock Equipment	
corrals	\$ 500
sheds	500
water facilities	300

	1,300
(c) Livestock	
100 two-year-old heifers	
@ \$250 each	= \$ 25,000
4 bulls @ \$500 each	= 2,000

	27,000
(d) Total	\$ 43,900

(ii) Crop Rotation

The rotation of crops will be as follows, with fertilizer rates much the same as those proposed in the "Grains" section and "Forage" section.

50 acres — 2 year sweet clover
 50 acres — 1 year sweet clover
 350 acres — in barley
 200 acres — in alfalfa
 50 acres — alfalfa breaking

(iii) Estimated Annual Operating Revenue

(a) To farming (physical returns):

350 acres of barley \times 50 bu.	= 17,500 bu.
100 acres silage \times 6 tons	= 600 tons
200 acres alfalfa \times 3 tons	= 600 tons

(b) To livestock (physical returns):

100 cows at 85% calf crop	= 85 head
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This would allow 43 bulls or steers for sale, 26 heifers (fat) for sale and 14 cull cows for sale. Sixteen heifers would return to the herd; also allows for 2% cow loss.

(c) Livestock Sales

1,000 lbs. \times \$26.50 \times 43 bulls	= \$ 11,395
900 lbs. \times \$24.50 \times 26 heifers	= 5,733
1,000 lbs. \times \$15.00 \times 14 cull cows	= 2,100

	\$ 19,228

(d) **Grain Sales**
 Total harvest 17,500 bu.
 Required for
 feed 5,780 bu.

$$\frac{11,720 \text{ bu.}}{\times 80\text{¢}} = 9,376$$

(e) Hay Sales		
Sale of 600 tons alfalfa @ \$22	=	13,200
(f) Total		\$ 41,804
NOTE: Sales and expenses are based on 100% of the original cost.		

NOTE: Silage and straw used for feed.

(iv) Estimated Annual Operating Cost

(a) Fertilizer and Chemicals:

Alfalfa:	\$8.50/acre	×			
	200 acres	=	\$ 1,700		
Grain:	\$6.70/acre	×			
	400 acres	=	2,680		
Chemicals (weed spray)			500		
				————	\$ 4,880

(b) Other Expenses:

Fuel	\$ 2,000
Repairs: $\$15,600 \times 10\%$	1,560
Seed: 450 acres $\times \$2/\text{acre}$	900
Insurance	300
Custom baling	2,400
	7,160

(c) Depreciation and Interest

Interest on equipment, cows,
etc. \$44,600 at 9% = \$ 4,014

Depreciation on:

$$\begin{array}{rcl} \text{equipment } \$15,600 \times 15\% & = & 2,340 \\ \text{buildings } \$1,300 \times 10\% & = & 130 \end{array}$$

Grazing fees on PFRA pasture:

104 head \times 6¢

Cattle Expenses:
 Mineral, vet costs and other
 expense:
 100 cows \times \$10 = \$ 1,000
 85 feeders \times \$10 = 850

(f) **Total** \$ 21,497

(v) **Forecast Profit and Loss Statement**

Total Gross Income	\$ 41,804
Total Expense	21,497
Income to Labor and Band	<u>\$ 20,307</u>

(vi) Returns to Band

$\frac{1}{3}$ PFRA pasture rent	\$	374
Winter grazing fees:		
$60 \times 104 \times 6\text{¢}$	=	374
Land rent to Band:		
700 acres $\times \$6$	=	4,200
		4,948

Returns to Labor (3 men)	\$ 15,359
Returns per man:	\$ 5,120

This program could use more cattle profitably. As the operators gained skill they may wish to enlarge the operation to 200 or more cows. The use of cross-breeding programs could further increase returns from 10 to 15 percent.

LEGUME AND GRASS SEED

This project is not recommended because of the high risk involved in marketing. The market is variable and fluctuates in extremes depending on supply and demand. The production itself is hazardous, with seed sets being erratic and yields undependable. This is not a business for a beginner. While the business is rewarding for experienced operators, it is advisable to gain some experience in the hay business before trying to grow seed. A cost accounting of the enterprise by itself is not very enlightening due to the impossibility of obtaining accuracy in price or yield estimates. Most of the equipment required to operate a farm is all that is needed for seed production. Most successful seed growers grow a wide range of seed to protect themselves from an unpredictable market. Most seed growers also have supplementary operations, such as feedlots which serve to use byproducts (screenings) and also to level out the income.

CUSTOM WORK

There is some potential in doing "custom work". "Custom work" is owning equipment and working for others by contract or hourly rate. Some examples are:

- (a) fence building, and
- (b) contract harvesting, contract seeding, etc. using all types of farm equipment.

The first can be entered into with very small capital. All that is necessary is a light truck and a post driver. The total cost new would be less than \$4,000. A light tractor would be an asset. This unit and a two man crew would be able to get work building fence for ranchers, farmers, governments and oil companies. Fencing labor costs would need to be about \$250 per mile to be profitable. Advertising the service would be necessary to ensure work.

Before investing in farm equipment to do custom work, the market should be examined. It is possible in some areas to do very well with equipment used for custom work. However the market is variable, and some definite arrangements should be made before investing in equipment. When determining what rate to charge, the cost of operation and ownership of each machine should be studied. Following are some "rules of thumb":

Depreciation: 15-30 percent of value of machine per year depending on type of machine.

Interest: This can either be the actual rate paid or the rate that could be earned with the same money, whichever is the greater.

Repairs: will usually average 10 percent of the machine value per year over a period of 10 years rising from 0 percent when the machine is new to a high of 20 percent when the machine is old. The above costs are overhead, and the hourly rate is determined by estimating the hours which the machine will be used and dividing that into the total overhead.

Fuel, labor and minor repairs will be added to the overhead rate to determine a base cost. Then add 10-20 percent for profit.

POULTRY — EGGS AND BROILERS

Violet Crowchild did a study on a large laying operation located in the Acme district. At the same time a small laying operation was visited and observed but no figures were taken from the second operation. The existence of a marketing board for poultry has limited free marketing to some extent and made it more difficult for new producers to enter the business. There is some opportunity for a small laying flock to act as a supplementary enterprise in connection with some other enterprise, such as grain growing. The best market would be door-to-door sales in Calgary.

Cost of production based on Mrs. Crowchild's findings would be as follows:

(i) Estimated Capital Investment		
Buildings—cage and waterers cost		\$ 5,000
500 hens @ \$1.85 each	=	925
		\$ 5,925
(ii) Estimated Annual Revenue		
18 dozen \times 50¢ \times 500 hens	=	4,500
(iii) Estimated Annual Operating Cost		
Depreciation \$5,000 @ 10%	\$	500
Interest 9%		533
Feed—500 \times 4 lbs. \times 2¢		1,460
\times 365 days		
Power Costs		120
		\$ 2,613
Poultry replacement costs		925
		3,538
(iv) Forecast Profit and Loss Statement		
Total Revenue	\$	4,500
Total Cost		3,538
Returns to labor	\$	962

These returns work out to less than \$3 per day which would not be a worthwhile labor return. Unless some means could be found to cut the overhead cost, returns would not be worthwhile, except as a supplementary enterprise.

HOGS

There was no interest expressed in hog operations by the Sarcee Indians. However, since there is a hog operation on the Blood Reserve, the enterprise will be dealt with, and if interest is expressed at a later date, then further information can be found.

Alberta has a Hog Marketing Board but this board has not set any delivery quotas, and is not empowered to do so under present legislation. At the present time, there is a large increase in hog production in Western Canada because of the grain surplus. A build-up of hog numbers will almost certainly bring hog selling prices to an export

level, that is, the U.S.A. price less freight. However, the export of pork to Japan is a possibility which could stabilize pork prices. Pork prices could be expected to stabilize at about \$28 per hundredweight. This is about the 1963-67 average price or slightly above.

The hog business requires close management. Disease can be very costly. Sanitation is very important. If the operation includes sow farrowing as well as hog feeding, then management becomes much more important.

A proposed hog operation (feeding only) for 800 pigs with a turnover of 2½ times per year.

(i) Estimated Capital Requirements

Buildings and equipment	\$ 60,000
800 hogs × \$22 ea. (purchase price)*	17,600
	<hr/>
	\$ 77,600

(ii) Estimated Annual Returns

2,000 hogs minus 3% death loss =	
1,940 hogs × \$28/cwt. ×	
1.60 cwt./hog	= \$ 86,912

(iii) Estimated Annual Operating Costs

	1969 Cost Level	1963-1967 Cost Level
Depreciation 10% of \$60,000	\$ 6,000	\$
Interest 9%	6,984	6,408
Feed—		
10 bus. × 2,000 hogs × 75¢	= 15,000	
Feed supplement—		
2,000 hogs × \$5	= 10,000	
Vet supplies and medicine		
2,000 hogs × \$1	2,000	
	<hr/>	
Operating Costs	\$ 39,984	\$ 39,408
Purchase cost of hogs	44,000	28,000
	<hr/>	<hr/>
	\$ 83,984	\$ 67,408
	<hr/>	<hr/>

(iv) Forecast Profit and Loss Statement

	1969 Cost Level	1963-1967 Cost Level
Estimated Annual Sales	\$ 86,912	\$ 86,912
Estimated Annual Costs	83,984	67,408
	<hr/>	<hr/>
Returns to Labor (2 man operation)	\$ 2,928	\$ 19,504
Returns per man	\$ 1,464	\$ 9,752
	<hr/>	<hr/>

* \$22 is the 1969 purchase price of a 40 pound weaner pig. The average cost of a 40 pound weaner pig for 1963-1967 is approximately \$14.

DAIRY

There was no interest expressed by the Sarcee people in dairying. This report will not deal with dairying except to discuss it generally.

A dairy farm can produce for several different markets:

- (a) **Fluid Milk Market** — This is the market which processes milk for sale by bottles or as a fluid.
- (b) **Manufacturing Milk Market** — This market uses milk for condensing (canned milk) or dehydration (powdered milk). It is also the market which buys milk for cheese making.
- (c) **Cream Sales** — This market buys only the butterfat of milk. The producer separates his milk, sells the cream, and usually feeds the skim milk to calves or pigs.

As in most other enterprises, it is necessary to go after the top market with a top quality product to make a reasonable return. Dairying, if producing for the fluid milk market, requires a heavy investment and exact management. The operation must be large enough to warrant installing bulk cooling tanks, pipeline milking machines, and good, complete facilities for housing in order to keep the product of a high quality. Management in herd health is exacting when dealing with high producing cows. Before starting a dairy business on the Sarcee Reserve, the prospective operators should work for a dairy farm for at least one year, in order to learn some of the management practices.

A smaller dairy operation as a supplement to another operation can be used. This enterprise would supply the manufacturing milk market or the creamery market. This market pays considerably less than the fluid market but the product can be of lower quality. That is, higher bacterial counts are allowed and bulk tank storage is not required. Barn inspection, if carried out, is much less rigorous. However, due to the lower price received, the margin is narrower, and returns are usually low. Further, many cheese factories have closed down, so there is less market for this kind of milk.

APIARIES OR BEEKEEPING

Beekeeping for honey production may have some possibilities on the Sarcee Reserve. First, there would have to be a lot more clover so that bees would have a flower to collect from, without flying too far. Honey bees will work alfalfa, but not if there are other flowers present. Alsike clover makes good honey, as does Fire Weed. With the present vegetation on the Reserve, beekeeping would be hazardous because of scarcity of flowers. The honey market is somewhat unstable so a forecast of returns is beyond the scope of this report.

RASPBERRIES

Raspberry growing as a supplementary enterprise has some merit on the Reserve. Raspberries can be successfully grown in similar climates. The canes are planted so they can be cultivated.

The canes require attention in early spring to cut out canes which are two years old, and will no longer bear fruit. The second year canes bear fruit. The first year canes are green and growing and do not flower. Picking is done by hand, but canes are available which will bear over a period of time.

The best market would be door-to-door selling in Calgary, but marketing would be difficult until a clientele had been built up. Raspberries will deteriorate rapidly after picking; therefore a quick means of marketing is necessary.

WILD RICE

There is no area occurring naturally on the Sarcee which would be suitable for wild rice. It must be covered with water for a depth of 1 to 6 feet. The seed will not germinate if it ever dries out. Seed must be stored under water. Harvest is accomplished with boats, and the rice is bent over the boat and hit with sticks. This method is costly and accounts for the high price. It has a limited market as a delicacy.

SASKATOONS

This would be a highly speculative venture. There is no market established of any consequence from which to gauge returns, and there is no cultural experience from which to judge costs. Saskatoons in flower are very susceptible to frosts. These frosts are not uncommon on the Reserve so the possibility of crop failure is very real. A market would have to be developed. This would involve much effort and investment. It is not an enterprise which has much to offer the Sarcee people at this time.

HORTICULTURAL CROPS (lettuce, carrots, cabbage, peas, beans, and potatoes)

The production of horticultural crops, particularly carrots, lettuce, and potatoes has some merit. There is a market for these crops but it must be developed, and sales should be made directly to the retail trade. The east end of the Reserve will grow these crops but the husbandry is demanding. Production must be on a large enough scale to warrant investment in enough equipment to guarantee quality. This includes washing and sorting equipment. The investment in equipment is about \$1,000 per acre. It is not an undertaking to be taken on without a thorough investigation of the market.

Alberta carrots can be stored successfully in good root house storage. Production must be regular and of

high volume. The carrots must be high quality, washed, sorted and packaged in small bags before they can compete with California carrots. Lettuce can be sold in season on the Calgary market and can compete successfully with imports. One advantage that the Sarcee Reserve has for this enterprise is a surplus of labor. These crops require a lot of labor, in the production as well as the sorting and washing. The enterprise could be tailored to this labor supply. The enterprise could be supplemented with a hothouse operation used for bedding plants and also some early starts for the horticultural operation.

SEED CLEANING PLANT

A seed plant on the Sarcee would be at a disadvantage because of the limited market from which to draw. In addition, the competition is from municipal seed cleaning plants which were built with the Province, the Municipality and private capital sharing equally the construction costs. There are very few privately owned seed plants around except those owned by seed growers. It is not recommended.

FEEDMILL, CHEESE FACTORY, ALFALFA DEHYDRATION PLANT

All of these enterprises have similar disadvantages. The management skills of these operations require some experience. A feedmill may be viable when there are more cattle on the Reserve. A cheese factory would not be viable unless a lot of dairy enterprises were promoted. An alfalfa dehydration plant would have to compete with the irrigation districts where alfalfa can be grown, producing much higher yields.

TANNERY

It is possible for a tanning business to support a few families by integrating a custom service along with the manufacture of a finished product.

The equipment investment can be little, with hand labor, or as high as \$30,000 with machines. Either method on a solely custom basis would require a great number of hides to make the enterprise profitable.

The market price for tanning a deerskin is around \$10 while the price for an elk or moose hide is \$25. The uniqueness of the Indian tanning process, that is the smoking rather than the chemical process, would add to the product's marketability, and allow for a higher asking price.

The short supply of wild game limits profits from a solely custom operation. Therefore the manufacture of moccasins or buckskin coats would be required to supplement the enterprise. The manufactured product could be either sold to clothing stores in Calgary or sold through a "crafts store" on the Reserve.

RENDERING

The rendering business has proven highly competitive in the Calgary area — there being only two rendering plants at the present time. With small margins these companies have succeeded only through a large volume type operation.

Dead animals are purchased or acquired free except for removal and transportation costs. The hides are sold for two to three dollars apiece. The rest of the carcass, twenty percent after water loss, must be sold out of the Province due to Alberta health regulations.

Another phase of this type of operation is the disposal of scraps from retail meat outlets. These remnants are manufactured into pet foods. Again volume is required to accomplish success.

Due to the complexity and competitive nature of this enterprise, it is not recommended at this point in time.

HORSES

Present Situation

It is estimated that between 800 to 1,000 horses are presently on the Reserve. In order for a pure-bred horse operation to be run most efficiently, a cleanup program to eliminate many of these "cayuses" would be needed. If this were not done there would be little hope of keeping a pure-line, without extensive fencing.

A solution to the problem would be to sell the excess horses as cannery. Cannery are presently worth six cents a pound. The money obtained could be reinvested in pure-bred mares and stallions and in this way would give a base for a breeding herd.

The Market

The best breed of horses as far as the present market is concerned is the Quarter Horse. They bring as much money as an Arabian, have a more even disposition (time requirements in breaking and handling are lower), and are still able to perform and run.

The proximity to Calgary makes for a natural horse market. City people desire horses for pleasure and the aesthetic value of horse ownership. These reasons make it feasible for a horse operation to be profitable on the Reserve.

(a) Raising Riding Horses

The value of horses is quite variable. It depends on the quality and beauty of the animal. The most profitable method of operation is to sell the colts just after weaning. Feed and labor requirements do not become excessive in this time period. Unless the colt is exceptional and can be trained as a cutting or roping horse, it is not profitable to keep him until older.

An idea of the value of horses can be drawn from the following ranges:

Mares:	\$ 200 - \$ 3,000
Two year olds:	\$ 200 - \$ 1,000
Weaned colts:	\$ 250 - \$ 1,000
Stallions:	\$1,000 - \$10,000

(b) Horse Boarding

Horses can be boarded with a few facilities and proper fencing of pasture. There is a good demand close to major centres.

The fees for boarding horses are as follows:

Pasture	—\$ 30/month/head
With hay	—\$ 45/month/head
In barns	—\$ 85/month/head
With winter arena	—\$125/month/head

(c) Horse Rental or Dude Ranch

Markets for this type of operation are good and could be most profitable in the Bragg Creek area. A major factor which makes this operation even more viable is the fact that a lower quality horse may be used. It is desirous to have even mannered horses and thereby lessen the chance of rider injury.

An operation of this nature requires a high degree of customer contact and service. For this reason it would appear that a more basic horse operation must be developed before a dude or horse rental operation could be activated.

(d) Raising Rodeo Stock

The raising of rodeo stock is a "hit and miss" pro-

position. It is estimated that one out of five horses has the capability to make a bucking horse. The other four are only good for cannisters. The best market would be to supply one of the larger rodeo stock contractors.

Breeding, as in all horse operations, is the key to success. Big animals are required for rodeo horses. It would be desirous to breed Clydesdale stallions to big mares.

A high degree of management and time are required in order to produce a bucking horse. The horses must be handled constantly when young so they are made into buckers and not just ones which run.

Because of the "hit and miss" nature of raising bucking horses, economics suggest that such an endeavour should be delayed until a riding or rental horse operation is running smoothly.

(e) Riding Trails and Outfitting

The basis for these operations is horses. Markets do exist for these endeavours but economics indicate that for them to become profitable a more basic rental horse operation must be developed first. Once the rental horse operation has been activated and becomes managerially sound, then outfitting and riding trails could be a natural follow up.

Breeding and Husbandry of Horses — see Appendix III Profit and Employment Opportunities in a Horse Operation

A 35 head operation on 160 acres of improved pasture is assumed in setting out the following figures:

(i) Estimated Capital Investment

(a) Livestock

2 stallions @ \$2,000 average	\$ 4,000
33 mares @ \$500 average	16,500
	<hr/>
	\$ 20,500

(b) Equipment

Barn with 3 box stalls	\$ 7,000
Fences (1/4 Section)	630
Corrals (1 large, 4 small)	667
Ropes (2 nylon, 8 cotton)	76
Halters (35)	123
Shanks (35)	35
Bridles (20)	100
Saddles (20)	4,000
Blankets (20)	120
Cooler blankets (4)	120
Brushes, combs, clippers	100
Loading chute	100
Stock trailer	3,000
1/2 ton truck	2,000
 Total Equipment Investment	 18,071
 Total Investment	 <hr/> <hr/> \$ 38,571

(ii) Estimated Annual Revenue		
31 colts @ \$350 average		\$ 10,850
(iii) Estimated Annual Operating Cost		
Depreciation	\$ 1,154	
Interest 9%	3,471	
Hay (mixed legume) 55 tons @ \$20/ton	1,100	
Oats 400 bushels	200	
Veterinary and medicine	350	
Repairs	100	
 Total Operating Cost	 \$ 6,375	
(iv) Forecast Profit and Loss Statement		
Revenue	\$ 10,850	
Cost	6,375	
 Net Profit to Labor and Band	 \$ 4,475	
Return to Band (from 160 acres of pasture at \$6 per acre)	960	
 Return to Operator	 \$ 3,515	

AGRICULTURAL RECREATION

Game Farms

In one type of game farm, the game is loosely confined and kept in a natural state to the extent possible. Income is obtained by charging admission.

In the second type of game farm, the game is raised for hunting purposes. The income is obtained by selling hunting rights.

Game farms require very close management by well-trained people and thus such a farm is not recommended on the Sarcee Reserve at this time.

Fish Farm

1. Types

There are two types of fish farms. The first is where a small amount of water and a high population of fish are used. Fish are fed and people are charged for the fish they catch. The fish being in high population density and used to being fed, are easily caught.

The problem with this type of operation is danger of disease caused by high population densities. It requires close management, and must be located close to a tourist attraction. There is less sportsmanship connected with this type of fish farm. The water body should be quite small, and bank fishing is all that is allowed.

The second type is to dam a water course that runs only in the spring. The dam should be constructed with a good run-around to protect it against heavy rains or quick spring melts. The dam should be built to an engineer's specifications. The dam should also have a system built in for draining. When the dam is full of water, it is stocked

with rainbow trout. Harvest can be accomplished in two ways. The pond can be fished throughout the summer at a daily charge. In the fall, the dam can be drained through a stream, and the fish picked up. The fish are worth from 60¢ per pound wholesale price to \$1.80 per pound retail price.

2. Husbandry of Fish Farming — see Appendix III		
3. Profit and Employment Opportunities in a Fish Farm		
(i) Estimated Investment		
Construct dam and landscape covering 10 acres	\$ 3,000	
PFRA will pay a share, estimate at:	1,000	
		\$ 2,000
(ii) Estimated Annual Revenue		
4 fishermen/day for 150 days @ \$2 each	\$ 1,200	
700 fish* @ 1 lb. each \times 60¢/lb. =	420	
		\$ 1,620
(iii) Estimated Annual Operating Costs		
\$2,000 at 9%	\$ 180	
Depreciation of dam: \$2,000 \times 5%	= 100	
10 acres of 4 inch fingerling at \$10/100 fingerling at 200/acres	200	
Licence for commercial fish farm	50	
		\$ 530

(iv) **Forecast Profit and Loss**

Revenue	\$ 1,620
Costs	530
Returns to Operator	<u><u>\$ 1,090</u></u>

A fish farm has some potential as a complementary enterprise on the Sarcee Reserve.

* 2,000 fingerlings at 65 percent survival = 1,300 fish
600 fishermen, average catch 1 fish, leaves 700 fish

RECOMMENDATIONS

On the basis of the foregoing it is recommended that training programs be initiated for interested Band mem-

bers, and that capital be sought to allow commencement of the following types of agricultural development:

- a. Forage Operation. There would appear to be scope for at least two 500 acre operations.
- b. Cow-calf Operation. There appears to be scope for at least three 500 head operations within the near future.
- c. Range Management. While range management may not be a "development" in a physical sense, it is a skill and an attitude which must be developed in order to allow the kind of integrated land use planning and management which should precede other developments of an agricultural or agricultural-recreational nature.

SECTION VII — INDUSTRIAL, URBAN AND COMMERCIAL DEVELOPMENT

This section of the study was the direct responsibility of Stanley Associates Engineering Ltd., under the direction of J. B. Hambley, P.Eng., F. Grigel, P.Eng., and J. M. Lainsbury, P.Eng., M.T.P.I.C.

In industrial, urban and commercial development there lies the greatest potential for income, employment, and training opportunities for the Sarcee People. The purpose of this section is to illustrate this potential and how it can best be exploited by the Sarcees for their lasting benefit.

INDUSTRIAL DEVELOPMENT

Because of the location of the Sarcee Reserve relative to the City of Calgary, the opportunities for industrial development are very real. During this study, numerous meetings have been held with Band Council and members, including the Banff workshop, so that the Sarcees clearly understand just what is meant by industrial development and how it might affect them. Reaction to the concept of industrial development has been highly positive and the consensus appears to be that action should be taken immediately.

The benefits to the Sarcee people resulting from the establishment of a number of industries on the Reserve are as follows:

- a) Employment opportunities would be provided for both men and women. The labour force inventory shows a high percentage of unemployed which can be drastically reduced, thereby cutting the welfare budget. The jobs available would be close to home and the people would not be subject to the discrimination which they all too often face when seeking work off the Reserve.
- b) Industries would provide an opportunity for Band members to learn new skills while earning an income at the same time.
- c) There has been no reward on the Reserve as an incentive to a young person to complete his education, nor for adults to take up-grading courses. With industry on the Reserve, this will no longer be the case. The rewards will be there for educational upgrading in the form of higher paid job opportunities.
- d) There will be some industrial revenue to the Band which will depend on the type of agreement necessary to induce various industries to locate on the Reserve. The revenue could be from land rental and taxation to pay for servicing costs, lease payments on buildings put up by the Band or royalties on production. It is felt that the Band should not consider revenue as the most significant benefit from industries. The main benefit will be the employment opportunities.

- e) Every agreement with an industry will be tailored to suit the industry's requirements. There may well be opportunity to invest band capital in part ownership of certain ventures with companies which have a good future for growth and profit. It should not be difficult to improve on the 7 1/4 % which the government now pays on the Band's capital fund in Ottawa.
- f) As indicated in a previous section, the Sarcee people have not had much in the way of achievement to be proud of in their recent history. With the development of the well planned successfully operated industrial park, the Band as a community will have something to point to with pride and,
- g) With an industrial park development there will be opportunities for Indian owned projects, such as welding shops and car repair depots. Some of these could be Band projects and some could be individual enterprises. Individual enterprise should certainly be encouraged on the Reserve. There may also be opportunities with those industries which move to the Reserve to make deals by which the Band or members of the Band, after a period of time, take over the complete operation of the industry.

Most of the factors which an industry considers in its decision to locate in Calgary apply equally well to the Sarcee Reserve. The Reserve can offer industries various things which are important in determining plant location, such as:

- a) The Reserve can offer a labour force of both men and women, having various skills and potential for the development of skills.
- b) Serviced land in the industrial areas of Calgary is becoming quite expensive, and industry can avoid some of these very substantial costs by locating on the Reserve on an operating permit basis.
- c) An industry locating on the Reserve will not have to pay Municipal and Business taxes to Calgary, although they will have to pay the Sarcee Band sufficient funds to pay for the servicing required by the industry.
- d) We are advised by the Department of Regional Economic Expansion that there is a program currently under discussion which will provide financial assistance to stimulate economic and industrial development on Indian Reserves. This program is expected to become effective in April, 1971.

- e) Through Canada Manpower and the Department of Indian Affairs, there are on-the-job training incentives available whereby a part of the wages of an Indian in training are paid, and also a part of the raw material used during such training is paid for. This can be a strong incentive to industries.
- f) The fact that the Band itself is in a flexible enough position to be able to provide capital assistance to certain industries should be an important factor. The example of the Alberta Panel Buildings plant which is currently nearing completion is a case in point.
- g) The location of the Reserve with good access to the City of Calgary is important for the easy delivery of raw materials and shipment of finished products.

There are also a number of disadvantages or constraints, real or imagined, which exist and should be carefully considered in industrial promotion. Some of these are as follows:

- a) An industry will not be able to own land in an industrial area on the Sarcee Reserve. This may be a very significant factor to some industries who are looking for capital gain on the land, but it is doubtful if this will be the situation with the majority.
- b) The reliability of Indian labour is a supposed problem which will have to be faced time and time again. The general image of Indian labour is not good, and the Sarcees will have to prove that this type of thinking is wrong, pointing out the excellent employee and training record that the Sarcees have had with Alberta Panel Buildings.

Another constraint which cannot be overlooked is the attitude that the City of Calgary, the Calgary Regional Planning Commission, and surrounding counties will take to the development of industry on the Sarcee Reserve. Discussions with the appropriate officials from these areas indicate that if industries locating on the Reserve have no potential for water or air pollution; or excessive noise, and are highly oriented towards the employment of native people, there will be no serious objections. If, on the other hand, the Sarcees allow industrialization by companies who are merely trying to escape the high land costs and taxation in the City, and are small employers of Indian labour, or whose operations would be noxious, or a nuisance to the residential areas east of 37th Street, then the surrounding governments would be very much annoyed. The Sarcees must consider these factors carefully and make rigid restrictions concerning the type of industry which will be allowed to locate on the Reserve.

It is concluded that the Sarcees should only seek out sufficient industries to provide the employment required by Band members, and that these industries should be clean and that the City should be kept informed of the progress of such industrial developments.

CHOICE OF SITES

The site chosen for immediate industrial development is immediately north of Anderson Road and approximately one half mile west of 37th Street. This site is not to exceed a total area of 20 acres and is intended for light, clean industry only. This site was chosen essentially for ease of access and servicing. Other, more extensive sites have been selected for future development on the basis of long-range accessibility and area topography and serviceability. Location of these sites is indicated on the proposed land use plan attached hereto.

ATTRACTING INDUSTRY

One of the main functions of the recently formed Sarcee Development Board is to promote industrial growth. The competition for new industries among communities in the Calgary area is intense, and the Sarcees must make every effort to publicize the advantages of industrial development on the Reserve. The Sarcee Development Board should have the responsibility for negotiations with industry and for industrial relations after the industry is established. In this manner, politics and business on the Reserve will be properly separated.

It is recommended that a brochure be designed and printed which outlines the advantages to industry of a Reserve location, and shows where the area for development is located, what services are available, and what leasing terms are obtainable. A company specializing in advertising promotion and industrial relations would be ideally suited to assist with such a brochure.

URBAN DEVELOPMENT

A cursory study indicates that there is an extremely large potential return to the Band in revenue and employment through the development of land in the east end of the Reserve for urban use. The area is ideally suited for a logical continuation of the growth of the City of Calgary to the southwest. In fact, there has been considerable pressure on the Sarcee Band in the past by developers who wish to initiate projects of this nature.

Initial local reaction to the use of even relatively small areas of the eastern township for urban development has been negative for several reasons. Firstly, the social survey showed that a great majority of the Sarcee people were not in favour of having whites living on the Reserve. Secondly, urban development implies long term leases of land, and the idea of alienating land for three, four or five

generations is met with considerable resistance by all but a handful of young people. The thought of selling land to a developer or to the City is absolutely out of the question.

It was felt that the potential for monetary return to the Band through urban development was so great that it could not be ignored. In spite of the initial negative reaction, it was felt that the Band should be made fully aware of the potential involved. The following is a review of the analysis which was carried out.

External Constraints to Urban Development

The matter of urban development on the Sarcee Reserve has been discussed with the City Commissioner, planners, and engineers of the City of Calgary on the basis that such a development would require complete cooperation and coordination with the City. The City has indicated that they would welcome such urban development and have offered to assist in any way possible. They would be very interested in becoming involved in the planning of the area and to modify their long range servicing plans and road network plans so that this development could be accommodated. The City is growing in a southerly, northerly and northwesterly direction. Its easterly growth is hindered by the industrial strip and the City's attitude is that development on the Sarcee Reserve would make for a more cohesive, better planned City. There would, therefore, appear to be no major external constraints to urban development on the Reserve.

Location of Urban Development

Housing sub-divisions are now being constructed less than half a mile from the Reserve boundary in the area of 98th Avenue S.W. and to the north of 98th Avenue. The first stage of urban development on the Reserve should largely start in Section 24 and extend in a northwesterly direction into the present military training leased land.

Advantages of development in this location are as follows:

- a) The land discussed is poor agriculture land.
- b) Access to the City is good, particularly when the Sarcee Trail is extended south along 37th Street and when a major north-south freeway is constructed along 14th Street.
- c) Internal servicing is not particularly difficult.
- d) The area envisaged encompasses only a few existing Sarcee homes.
- e) The area has fine view lots, though the views are mainly of the Glenmore Reservoir and the City, rather than the mountains.

The main disadvantage to development in this area relates to external sewer servicing. The area has to be sewered to the Fish Creek treatment plant in the southeast corner of the City, which is more remote from the northeast area of the Reserve than it is from the east central

area. However, when one considers the costs of internal servicing of any major amount of land the costs of external servicing are rather small in comparison.

Revenue Estimates

The key source of income which would be realized by the Band through urban development would accrue from lease of lands. Raw land in the Calgary area is presently valued at approximately \$8,000 per gross acre. For a subdivision covering one section of land, an annual return of 8% of the land value would yield approximately \$410,000 per annum. It should be noted in this respect that Central Mortgage and Housing Corporation will grant a mortgage for a house on leased land provided that the lease extends for ten years beyond the mortgage payments. It is felt however, that the longest possible lease term should be used in order to increase the marketability of the property.

Before the land can be leased however, it must be fully serviced with all the necessary street, utilities, boulevards and landscaping. This will cost in the order of \$10,000,000 per section which would be paid off by the leaseholders over a twenty-five year period.

Population and growth projections for Calgary show that every ten years the population will increase by 200,000 people. Assuming conservatively that 15% of this increase would locate in development areas on the Sarcee Reserve, there would appear to be potential for approximately two completely developed sections of land on the Reserve every ten years.

Marketability

In order to assess the marketability of Reserve lands in comparison to equivalent areas in other parts of the City of Calgary, consider the example of a family intending to purchase a house and lot in Calgary for \$31,500. This family could get an N.H.A. Mortgage of \$23,000 and would require a down payment of \$8,500; their approximate monthly payments would total \$265.00 per month (I.P.T.). The same family could build the same home on a leased lot on the Reserve and would be able to reduce their down payment by approximately \$6,500 since they would not have to purchase a lot. A mortgage of \$23,000 would still be obtainable, with a down payment of only \$2,000. The monthly payments however, would be greater, since in addition to the mortgage payments of \$265 the family would have to pay an additional \$52.00 per month in leasing and servicing costs. Should the family choose to build on the Reserve and invest the saving in down payment of \$6,500, the interest on this investment would approximately balance the additional monthly payments necessary on the Reserve. In any case, it is felt the low down payment requirement on the Reserve would be very inviting to a large portion of the housing market.

It is concluded from the foregoing that from a financial standpoint, land on the Reserve will compare favorably with other developing areas within the City of Calgary. The area suggested for urban development will have good access to other parts of the City of Calgary and because of its topography, will offer the possibility of a number of very attractive view lots. Assuming the use of sound planning and development techniques, it is concluded that the Sarcee area will compare favorably with other developing areas around the City of Calgary, and that the potential for urban development of this area is very real.

Opportunities for the Band

Urban development on the Reserve is considered more in the context of a revenue producer for the band than as a source of employment opportunities. Nevertheless, there would be some opportunities for the Sarcees to get a start in various areas of construction, or at least to obtain jobs with contractors hired to install services or construct buildings. Once the development is in operation, there would be some employment opportunities in the commercial area which would be developed along with the residential functions. It has been assumed that an agreement would be arrived at between the Band and the City whereby the City would supply sewer, water and road maintenance, policing, fire protection, snow plowing, and garbage collection, in return for which the City would receive payments in lieu of property and improvement taxes.

COMMERCIAL DEVELOPMENT

This section deals with the potential for commercial development on the Reserve, particularly in the east end bordering Calgary. Examples of the types of projects envisioned are drive-in theatres, drive-in restaurants, service stations, shopping centre, and a mobile home park.

Many of these commercial projects would automatically develop in conjunction with other urban development, should the band decide to exercise this option. Some of them however, may be feasible even without major urban development on the Reserve.

A shopping centre depending for its income primarily on clientele from developing areas adjacent to the Reserve does not appear to be particularly feasible at this time. Such developments are normally planned for the geographic centre of a populated area, although many are on fringe areas if road access is excellent. Neither of these criteria apply here at this time. When the City road network is more developed in the area north of Anderson Road and east of 37th Street, and when the residential development in the southwest is closer to the Reserve, the promotion of such a development might be considered.

The development of a large shopping centre is a very complex and specialized business, and one which the Sar-

cees are not in a position to enter alone. What is visualized therefore is an agreement between the Sarcees and a developer who would undertake to look after the servicing, financing, and development of a shopping centre on Reserve land. From such a development, the Band would achieve additional lease income, the possibility of employment in the various stores within the shopping centre and the convenience of close shopping facilities for Band members.

While the shopping centre development on the Reserve is not feasible at this time, it is recommended that the Development Board initiate discussions with competent developers in the City of Calgary within the near future.

The development of a drive-in theatre is worthy of some consideration. There are only five drive-in theatres in the city at present and only one in the south end. The consensus of opinion derived from discussions with operators and film distributors is that there is room in Calgary for at least two more drive-ins, although the Reserve area at present is considered too remote from population centres. It would appear however, that this may be a feasible development within five years.

Since the development of a drive-in theatre would provide very few employment opportunities relative to the capital required, it is recommended that the Development Board consider a drive-in theatre development only on the basis of a lease of raw land to an outside developer. The board should make initial contacts with existing operators in the near future, to make them aware of the long term development possibilities on the Reserve.

Since there is very little traffic through the Reserve or on 37th Street south, and since urban development is still some distance from the Reserve boundary, the development of service stations and drive-in restaurants is not recommended at this time.

Mobile Home Park

The development of a Mobile Home Park appears to have very good potential and the idea of such a development has received excellent acceptance from the Band. A properly developed Mobile Home Park, with paved streets, landscaped lots, garden and recreation areas, swimming pool, community hall and shopping centre can be as attractive as any other subdivision.

The mobile home industry, which has shown steady growth over the last ten years, has received new emphasis with the current tight money situation. High interest rates and high costs of conventional housing are inducing increasing numbers of young families to invest in portable housing. Mobile homes are modern and spacious, some having up to 1,200 square feet of floor space. The only difference between a regular house and a mobile home is portability. Studies indicate that mobile home owners are

quite stable, staying on the average five years in one place. They are good credit risks and one study showed that 85% of mobile home owners earn over \$8,000 per year and 11% over \$10,000. When they do move, their spots are soon filled by other mobile home families. Therefore, servicing and development of a modern Mobile Home Park is a long term type of operation.

Within the next few years, mobile home sales are expected to comprise 30% to 35% of the entire new housing market in the United States. In 1968, mobile homes accounted for 10% of the total single detached housing starts in Canada, and in 1969 accounted for 13% of single housing starts. The demand for this type of housing, and therefore the demand for mobile home parks is growing rapidly. In Calgary at the present time there are ten Mobile Home Parks, having capacity for approximately one thousand units. These parks are often extremely crowded, lacking in amenities and in undesirable locations within the City. A well designed alternative available to the market, such as a park on the Sarcee Reserve, would be in an excellent market position.

The location of a Mobile Home Park on the Sarcee Reserve is dictated by servicing requirements. In this respect, a number of meetings have been held with various city officials who have advised as follows: "By locating the Mobile Home Park fairly well centered on 98th Avenue and 37th Street, it would be possible to service this property by an extension of sanitary sewers from the existing Oakridge Village. We would recommend however, that these connections be made on the proviso that if downstream surcharging conditions occur, the Reserve will install storage facilities so that the discharge could be limited to off-peak hours. If the Mobile Home Park is developed in the low lying land located south of Southland Drive, then the servicing would, in all probability, require a pump station which would pump to the proposed sewer in the Cedar Brae subdivision. The City Water Department also advised that at the present time the most economical area to service with water on the Sarcee Reserve would be adjacent to 37th Street and 98th Avenue S.W. and the necessary connections could be made quite cheaply." The location of the park is thus fairly well determined in an area of the reserve which is poor farmland but fairly heavily treed.

Access to the proposed Mobile Home Park will be via the existing route of Anderson Road (114th Avenue South), then north for approximately one mile along 37th Street S.W. Presently there is no road on 37th Street and construction of a roadway will be required on the existing road allowance right-of-way. If access to the mobile home park can be obtained from Southland Drive, then a much shorter length of road would have to be constructed and at a lesser total cost; however, at present the property for such a roadway is not available. When the Mobile Home

Park project is approved, serious deliberations with the land owner can be initiated by the Sarcee Band in conjunction with the City of Calgary.

The long range plans for the City of Calgary call for 37th Street to be a freeway. If the proposed access road to the Mobile Home Park along 37th Street is constructed so that it can be integrated with the proposed City road at some future date, then the Sarcee Band will stand a good chance of recovering the cost of the roadway from the City of Calgary, at such time as the City builds 37th Street. The City does not include construction of this roadway in its five-year plan; however, it does show a budgeted amount for right-of-way acquisition in 1975. It can be implied from this that the City is considering constructing 37th Street soon after 1975.

The roadway along 37th Street, from Anderson Road to the Mobile Home Park, should be constructed as a two lane paved roadway, with rural cross-section (no curb and gutter), so as to minimize initial costs. Discussions on cost sharing arrangements with the City of Calgary should begin when this project is approved. The full cost of the 2 lane roadway is included in the external servicing costs shown in this Report, although it is anticipated that cost sharing or eventual total cost recovery can be negotiated with the City of Calgary.

The estimated economics of development of a 500 unit Mobile Home Park developed in stages of 125 units is as follows:

ESTIMATED DEVELOPMENT COST

Internal development cost

- estimated cost: \$48 per front foot, first stage
\$50 per front foot, balance
- average lot size: 40 feet frontage
- average lot cost: $40 \times \$48$ $\$1,920$

—total internal servicing cost—
first stage: $\$1,920 \times 125 = \$240,000$

External development cost

—estimated external services— \$ 15,000

—estimated external
roadway \$ 70,000

—total external development cost \$ 70,000

Total development cost, first stage

\$ 325,000

Estimated development cost, each subsequent stage:

each subsequent stage:

ESTIMATED REVENUE

—for first stage, assuming 90% occupancy and ren- tal rate of \$55 per month (Average Calgary rate), gross revenue = 125 × 55 × .9 × 12	\$ 74,250
—estimated operating cost	
—salaries	\$ 10,000
—equipment amortization	3,000
—maintenance allowance	4,000
	—————
	\$ 17,000
	—————
Annual return on investment	\$ 57,250

Assuming that:

- a. The Mobile Home Park is developed in equal increments of 125 lots in 1971, 1975, 1980 and 1985,
- b. that development costs for the first stage will equal \$275,000 in 1971 and \$50,000 (for paving and landscaping) in 1972,
- c. That development costs for further stages will equal \$200,000 in the year of initial development and \$50,000 in the following year, and
- d. That annual operating costs will be as follows:

1971 - 75 inclusive	\$17,000
1976 - 80 inclusive	33,000
1981 - 85 inclusive	43,000
1986 - 90 inclusive	53,000

then the net cash flow for the proposed Mobile Home Park may be estimated as follows:

Estimated Net Cash Flow

PROPOSED MOBILE HOME PARK

Year	Annual Cash Flow			Cumulative Net Cash Inflow
	Inflow	Outflow	Net	
1971	\$ NIL	\$ 275,000	\$ (275,000)	\$ (275,000)
1972	75,000	67,000	8,000	(267,000)
1973	75,000	17,000	58,000	(209,000)
1974	75,000	17,000	58,000	(151,000)
1975	75,000	217,000	(142,000)	(293,000)
1976	150,000	83,000	67,000	(226,000)
1977	150,000	33,000	117,000	(109,000)
1978	150,000	33,000	117,000	8,000
1979	150,000	33,000	117,000	125,000
1980	150,000	233,000	(83,000)	42,000
1981	225,000	93,000	132,000	174,000
1982	225,000	43,000	182,000	356,000
1983	225,000	43,000	182,000	538,000
1984	225,000	43,000	182,000	720,000
1985	225,000	243,000	(18,000)	702,000
1986	300,000	103,000	197,000	899,000
1987	300,000	53,000	247,000	1,146,000
1988	300,000	53,000	247,000	1,393,000
1989	300,000	53,000	247,000	1,640,000
1990	300,000	53,000	247,000	1,887,000
	—————	—————	—————	
	\$3,675,000	\$1,788,000	\$1,887,000	

Children living in the proposed mobile home park will be allowed to attend City of Calgary schools, but will be assessed a nominal tuition fee as follows:

elementary	\$20.00 per year
junior high	\$30.00 per year
senior high	\$55.00 per year or \$ 1.60 per credit

In addition, any busing required would be the responsibility of the Band. Such a service could be easily integrated with the present school bus operation, with costs being recovered from a monthly levy against each participating student.

Policing arrangements for the mobile home park should be made with the RCMP, and fire protection arrangements should be made with the City of Calgary. A service charge will be levied against each unit in the

park to cover the cost of fire protection, as well as to cover costs for water supply and sewage treatment which will be assessed by the City of Calgary. In total, this service charge should be no more than \$5.00 per month, giving a total basic cost of \$60.00 per month for each mobile home unit.

RECOMMENDATIONS

On the basis of the foregoing, it is recommended that the Sarcee Development Board move towards immediate incorporation under the Alberta Societies Act, and take immediate action to initiate development of a Mobile Home Park as outlined above. It is further recommended that other development within the eastern township be controlled in such a way as to leave the option of urban development open to future generations.

SECTION VIII — RECREATION DEVELOPMENT

The recreational section of this study was the responsibility of Travacon Research Ltd., under the direction of Mr. J. W. Burrows.

Research has led to the conclusion that there is considerable potential for both summer and winter recreational activities on the Sarcee Reserve. The Bragg Creek area in particular provides a very attractive setting for many outdoor recreational pursuits. The demand for the recreation resources which the Sarcee Reserve possesses can be divided into the following categories:

- A. One day visits in the area by tourists and visitors.
- B. Several day visits in the area by tourists and visitors.
- C. Weekend and vacation visits in the area by Calgary residents.

Since it is the objective of this section to recommend the best overall course of action for the development of a recreation industry on the Reserve, each category of demand has been analyzed to determine which recreation activities are likely to offer the most attractive economic as well as social benefits to the Sarcee Band. In other words, new sources of revenue were not the only criteria for judging whether a recreational development should be undertaken on the Reserve.

The recreation developments which appear to be best suited to the physical, financial and human resources available on the Sarcee Reserve, and which are dealt with in detail are as follows:

- A. One day visitors—nine hole golf course.
- B. Several day visitors—tent and trailer park.
- C. Weekend and vacation visitors—vacation or secondary homes.

GOLF COURSE DEVELOPMENT

It is the purpose of this section to examine the physical and economic feasibility of establishing a golf course as a viable use of a segment of the Sarcee Reserve property. By viable use it is meant the employment of land in such a way as to make positive financial return to the Band as well as to provide an attractive opportunity for employment of Band members.

In terms of physical capacity, a good nine hole course would be approximately 3,600 yards in length and would require approximately 110 acres of property which has access to relatively inexpensive irrigation. It is considered that such property is available on the Reserve in the east end area in the vicinity of the Glenmore Reservoir. Selection of a specific site would be the task of a qualified golf course architect.

At the present time there are 13 golf courses in the City of Calgary, nine of which are open to the public. City authorities consider that there is a serious shortage of public operated golf courses or golf courses which are open to the general public on a "per round" payment basis. This explains in part the City's hope to commence construction on the new course in north-east Calgary in 1971, and their tentative plans for additional courses following 1971.

It is estimated that the capital cost of establishing a golf course on the Sarcee Reserve land would be approximately \$300,000, for construction of fairways, greens, club house, and the acquisition of all necessary operating equipment. Assuming twenty-five year financing at 8%, this would imply an annual capital cost of approximately \$28,100. Other annual operating expenses, including approximately \$28,000 in salary and wages, would amount to \$44,000, for a total annual cost of \$72,100.

Revenue from all sources is estimated at \$65,000. It would appear therefore, that unless extremely low cost financing can be obtained or unless the City of Calgary were willing to participate in the financing of such a development, a nine hole golf course would operate at a deficit until initial capital costs were retired.

TENT AND TRAILER PARK DEVELOPMENT

Introduction

It is the purpose of this section of the report to examine the economic prospects of establishing a modern tent and trailer park on a segment of the Sarcee Reserve.

Generally, North America is undergoing an explosive growth in family camping vacations. Woodhall's Trailer Travel Research Bureau reports a 421% increase in camping vehicles in the U.S. and Canada over the past two years. In 1966, there were 1.3 million camping vehicles and at the present rate of increase of approximately 30% per year, it is forecast that there will be 7.5 million camping vehicles in North America before 1980. Naturally, this phenomenal growth will create heavy demand for good tent and trailer park facilities throughout the continent.

The tourist traffic flow into Calgary is increasing every year and the number of tourist "campers" as a percentage of total tourists is increasing at an even faster rate. Therefore, there is at present, and there will continue to be a very high demand for tent and trailer facilities not only throughout the province, but more particularly in the Calgary area.

It is considered that a 30 to 50-acre site along Fish Creek, in the East End area of the Reserve would be an ideal location for the establishment of a first-class tent and trailer park operation. This location would enhance the

marketability of the park to the increasing number of U.S. tourists entering Alberta through the Highway No. 2 South gateway. For example, the monthly vehicle count of U.S. tourists through this gateway is currently running at approximately 1,000 vehicles per day in July and August, and this traffic is now growing at the rate of approximately 14% per year; moreover, total vehicle traffic on this highway is increasing at the rate of approximately 10% per year on a year-round basis, factors which augur well for the future prospects of a new tent and trailer park serving this highway.

Present Supply of Tent and Trailer Parks in the Calgary Area

The following table lists the commercial tent and trailer parks, with their facilities, presently located in the Calgary area and on the No. 2 Highway as far south as Fort MacLeod.

On the No. 2 Highway South, there are three parks offering tenting spots only, two parks offering trailer spots only and one park offering both types of site. The total number of tent and trailer sites in these locations is approximately 217, and they provide such services as sewer hookups, fireplaces, water and electrical outlets, showers, flush toilets and coin laundries. Depending on accessibility, degree of development and general condition of the park, the rental charges range between \$2.00 and \$3.00

per car per night. Additional charges of from twenty-five cents to a dollar are common for sewer hookups in this area. In addition to these parks on the No. 2 Highway, there are two Alberta Highway Campsites located at Okotoks and High River. These campsites provide minimum facilities and are free to the travelling public.

In the greater Calgary area, there are approximately 415 commercial tent spots and 455 commercial trailer spots; the two principal parks in the city being the St. Patrick's Island, which is owned and operated by the City, and Happy Valley Park, which is privately owned and operated.

St. Patrick's Island has 100 tent sites with good facilities and central location and offers sites at \$1.50 to \$1.75 per night. However, the City is going to phase out this tent and trailer camping area by the end of 1972. Indications are that the Council's feeling is that the City is very inadequately served by Tent and Trailer Parks, and that with the closing of St. Patrick's Island Tent Park, they will likely consider building tent and trailer facilities in the Fish Creek Valley near the MacLeod Trail. However, the Parks & Recreation Department has suggested that if another party were to build such a facility, then the city would not go into competition. The City's position on two points is significant in considering the feasibility of developing a tent and trailer park in the Fish Creek area of the Sarcee Reserve:

COMMERCIAL TENT AND TRAILER PARKS
CALGARY AREA AND HIGHWAY NO. 2 SOUTH TO FORT MACLEOD

LOCATION	NAME	TYPE OF SITE TENT	TYPE OF SITE TRAILER	SEWER HOOKUPS	WATER	HYDRO	SHOWERS	FLUSH TOILETS	LAUNDRY
Calgary	Armstrong Motor Trailer Park	—	20	X	X	X	X	X	X
Calgary	Bow Bend Trailer Park	15	80	X	X	X	X	X	X
Calgary	Cloverleaf Trailer Park	—	46	X	X	X	X	X	X
Calgary	St. Patrick's Island	100	—	—	X	X	X	X	X
Calgary	Green Gardens Motor Trailer Park	—	19	X	X	X	X	X	X
Calgary	Happy Valley	300	300	X	X	X	X	X	X
Okotoks	Sheep River	100	—	X	X	X	X	X	X
Claresholm	Centennial Trailer Park	8	8	X	X	X	X	X	X
Fort MacLeod	Sunset Motel Trailer Park	—	20	X	X	X	X	X	X
Stavely	Town of Stavely	—	11	X	X	X	X	X	X
High River	George Lane Memorial Luther Park	50	—	X	X	X	X	X	X
Nanton		20	—	X					

- (a) their assessment of Calgary's very inadequate tent and trailer facilities,
- (b) their encouragement of a tent and trailer development in the Fish Creek area and their intent to stay out of that business if an outside party develops this concept.

The Happy Valley Tent & Trailer Park is located just north of the Trans Canada Highway on the western outskirts of Calgary. It is by far the largest park in the area with approximately 300 tent sites and 300 trailer sites. Rental rates range from \$2.00 to \$3.00 per car per night, depending on the type of hookup used. This park can be rated as a good facility but because of its westerly location, it should not be considered a major competitor for the proposed Sarcee tent and trailer park on Fish Creek. Moreover, due to excessive summer demand for camping sites, Happy Valley has to turn business down virtually every day during July and August. A summary of the occupancy of this park during the operating season appears below:

Average Daily Occupancy
Happy Valley Tent & Trailer Park

Month	Sites Sold Per Day	Monthly Occupancy Ratio
May	100	17%
June	300	50%
July	600	100%
August	600	100%
September	150	25%

Development Concept for Fish Creek Tent & Trailer Park

It is most evident that a new, modern tent and trailer park is required in the south-east area of Calgary not only because of the increasing demand for commercial camping sites, but also because of the City of Calgary's plans to close the existing St. Patrick's Island Tent & Trailer Park before the end of 1972. Therefore, it is proposed that the Sarcee Band give serious consideration to allocating 30 to 50 acres around Fish Creek for the development of a first-class tent and trailer park. Since this area is not immediately beside the highway, it poses somewhat of a marketing problem because the passing motorist cannot see the park and therefore, has no idea of the quality of the facilities. Therefore, it is considered essential that the Sarcee Tent & Trailer Park be operated as a franchise of a large international franchise chain, such as Kamp Grounds of America, commonly referred to as "KOA". With this international identification and the controlled standards of quality which membership in this franchise organization guarantees, the typical camping tourist will have no hesitation in venturing three miles off the highway to stay overnight in what he knows will be first-class camping accommodation. Furthermore, a large and well-

established franchise organization, such as KOA, can assure a good level of business to its members through its own referral and reservations system. The franchise concept has been instrumental in the success of many operations in the motel and restaurant industry and it shows great promise of ensuring similar success in the camping industry. At present, KOA has over 400 nationally franchised campgrounds throughout the United States, particularly the north-west states, and is now launching an expansion program into Canada.

Therefore, it is recommended that the Sarcee Band consider the establishment of a 150-site, KOA franchised tent and trailer park in the East End area of the Reserve. Estimated capital costs of this development are as follows:

Franchise Fee	\$ 8,900
*Administration and Service Building	40,000
Laundry facilities	2,500
Store equipment and stock	7,000
Septic tanks	4,000
Tables and grills	4,500
30 Sites with water, sewer and electric services	9,000
30 Sites with water and electric services	3,000
90 Sites with water service	3,000
**Roads, gravel, trout pond	8,100
	<hr/>
+ 20% engineering and contingencies	\$ 90,000
	18,000
	<hr/>
Total	\$ 108,000

* This building will house the manager's living quarters, the public shower and washrooms, a store and souvenir shop and laundromat facilities.

** It is not considered that a swimming pool is necessary at this time. However, a suitable pool for this park would cost approximately \$20,000 and most likely will be necessary in two to three years as the development expands or as competition increases. The experience in the United States is that a swimming pool can improve occupancy by as much as 25%.

Economics of a KOA Franchised Tent and Trailer Operation

Consultations with KOA representatives in the Calgary area have revealed that several hundred requests from campers regarding the availability of KOA facilities in this area have been received during the past season. This experience plus the fact that a new KOA park would be far superior to any existing tent and trailer parks in the region, support the forecast that the proposed Sarcee development would have an immediate, positive market impact. Therefore, during the proposed operating season from May 1 to September 30, a very high average occupancy level is forecast for the proposed 150-site de-

velopment. The monthly occupancy forecast appears below:

Monthly Occupancy Forecast
Proposed Tent & Trailer Park
Sarcee Reserve

Month	Average Sites Sold Per Day	Monthly Occupancy Ratio
May	100	67%
June	135	90%
July	150	100%
August	150	100%
September	125	83%

No. of Sites	Service Used	Price Per Car Per Night	Gross Daily Revenue at 100% Occupancy
90	Water outlet only	\$2.25	\$ 202.50
30	Water and Hydro	2.75	82.50
30	Water, Hydro and Sewer	3.50	105.00
Maximum Daily Revenue			\$ 390.00
Average Maximum Daily Revenue Per Site			\$ 2.60

A secondary and very lucrative source of revenue in a KOA tent and trailer park operation is through the sale of products such as groceries, souvenirs, camping supplies, and sundries such as soft drinks and candy. Also in this category of secondary revenue are the receipts from coin-operated machines such as washers, dryers, ice

In order to achieve the very high occupancy level which is forecast above, a realistic rate structure has to be adopted in order to secure the necessary market penetration. It is proposed that the following rates will be completely competitive in the Calgary market:

machines, etc. The KOA experience in its operations to date is that secondary revenue of approximately 65% of site rental revenue is generated in each outlet. Based on the foregoing occupancy and sales forecasts, the anticipated monthly revenues for the proposed Sarcee tent and trailer park are as follows:

Month	Occupancy Forecast	Site Rental Revenue	Secondary Revenue	Gross Revenue
May	67%	\$ 8,100	\$ 4,270	\$ 13,370
June	90%	10,530	6,850	17,380
July	100%	12,090	7,860	19,950
August	100%	12,090	7,860	19,950
September	83%	9,720	6,330	16,050
Total		<u><u>\$ 52,530</u></u>	<u><u>\$ 34,170</u></u>	<u><u>\$ 86,700</u></u>

The estimated profitability of the proposed tent and trailer park operation, based on these revenue forecasts is presented in the following operating statement. From this statement it is evident that the Sarcee Band could realize a net operating income, before taxes, depreciation

and interest, of approximately \$29,000 per year. On an estimated capital investment of \$108,000, the apparent return of capital or "capital payback period" is four years, a business opportunity which by any standard must be considered as very attractive.

**Estimated Annual Operating Statement
Proposed 150-Site Tent & Trailer Park
Sarcee Reserve**

REVENUES

Site Rentals	\$ 52,530
Secondary Income	34,170
	<hr style="border: 0; border-top: 1px solid black; margin: 0; margin-top: 5px;"/>
	\$ 86,700

EXPENSES

Cost of Goods Sold (Groceries, etc.)	\$ 22,600
Salaries and Wages	8,400
Franchise Fees	4,200
Advertising and Signs	5,000
Repairs and Maintenance	6,000
Utilities	5,000
Insurance	1,000
Legal and Accounting	1,000
Office Supplies	1,500
Miscellaneous	3,000
	<hr style="border: 0; border-top: 1px solid black; margin: 0; margin-top: 5px;"/>
	\$ 57,700
	<hr style="border: 0; border-top: 1px solid black; margin: 0; margin-top: 5px;"/>
NET OPERATING INCOME	\$ 29,000
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Assuming opening of such an operation in July, 1971, and assuming an expenditure of \$20,000 in 1974 for development of a swimming pool, then the net cash

flow for the proposed 150 site tent and trailer park would be as follows:

TABLE 2
ESTIMATED NET CASH FLOW
PROPOSED 150 SITE TENT & TRAILER PARK

Year	Annual Cash Flow			Cumulative Net Cash Inflow
	Inflow	Outflow	Net	
1971	\$43,000	\$152,000	\$(109,000)	\$(109,000)
1972	87,000	58,000	29,000	(80,000)
1973	87,000	58,000	29,000	(51,000)
1974	87,000	78,000*	9,000	(42,000)
1975	90,000	58,000	32,000	(10,000)
1976	90,000	58,000	32,000	22,000
1977	90,000	60,000	30,000	52,000
1978	90,000	60,000	30,000	82,000
1979	90,000	60,000	30,000	112,000
1980	90,000	60,000	30,000	142,000
1981	90,000	60,000	30,000	172,000
1982	90,000	60,000	30,000	202,000
1983	90,000	60,000	30,000	232,000
1984	90,000	60,000	30,000	262,000
1985	90,000	60,000	30,000	292,000
1986	90,000	60,000	30,000	322,000
1987	90,000	60,000	30,000	352,000
1988	90,000	60,000	30,000	382,000
1989	90,000	60,000	30,000	412,000
1990	90,000	60,000	30,000	442,000

* includes \$20,000 for swimming pool.

Advantages to the Sarcee Band

In addition to the very attractive profit potential of \$29,000 per year to the Band, the tent and trailer park would provide employment for a husband and wife team on a year-round basis and three student or part-time employees during the summer operating season. Another major attraction to the Band is the possibility of developing a souvenir shop business in conjunction with the tent and trailer park. If the Band were to develop a small handicrafts industry on the Reserve, the tent and trailer park would provide an excellent marketing outlet for these souvenir products. It is estimated that upwards of 20,000 vehicles will be visiting the tent and trailer park each season and with the majority of them being U.S. tourists, Canadian made souvenir items could experience a very high demand from this market.

THE SECONDARY OR VACATION HOMES MARKET IN THE CALGARY AREA

Background

In the early years of this century the ownership of a second home was a luxury that could be afforded by only a small minority of the wealthy people of this continent. In the past twenty or so years however, a tremendous increase in the number of vacation homes has occurred.

One estimate of the increase in secondary homes in the United States is that the 1.9 million recorded by the Census of Housing in 1960 had increased to some 2.4 million by 1963 and 3 million housing units by 1966. In other words, it is acknowledged that approximately 5% of U.S. families own a secondary or vacation home.

The recent increase in demand for vacation homes is the result of several trends in the North American pattern of existence. The first of these is that there is a clear desire by many persons to have a "second life" which is away from their normal work-a-day existence. The pressures of modern urban living are such that complete relaxation can often only take place in an environment which is physically removed from the work-day environment and which is relatively calm and peaceful. Secondly, many persons, as a reaction against the super-sophistication of urban life, desire periodic repose in a more simple atmosphere, a "return to nature" as it were. Thirdly, the lack of recreational opportunities in many cities prompts people to search for an environment where such facilities are readily available and can be enjoyed within a few yards of one's home. The vacation home, in an adequately serviced and scenic area, can fulfil the needs of people for relaxation, simplicity and recreation.

Demand is also related to the increasing amount of leisure time people now have — it is now almost universal for people to get two days off every week, to get two to three weeks paid vacation, and an increasing number of

statutory holidays. Families now have the time to enjoy a vacation home, particularly if it is a year-round home close to their primary residence.

The secondary home has also become a means of forced savings. Many families are more likely to pay \$50 or \$100 per month on a vacation home mortgage than to place a comparable amount in stocks or even in a savings account. Also, many families might hesitate to spend \$1,000 per year on a vacation trip, but when combined with capital accumulation, a recreation-oriented expenditure of this magnitude is often more appealing. In many areas the typical capital appreciation on a vacation home is 10% per year.

The above-noted trends have been coupled with rapidly rising urban family incomes which now make it possible for an ever-increasing percentage of Canadian families to own a vacation home. The result has been that the demand for vacation homes has shown a steady and consistent increase, and a recent estimate in the U.S. market suggested that approximately 150,000 to 200,000 new secondary homes were being built each year.

The major single deterrent to faster growth in this rapidly expanding industry is the lack of adequate financing methods. A recent survey of U.S. secondary home builders and developers resulted in approximately 75% of them identifying this as the major problem in this industry.

Basic Secondary Home Site Requirements

There are a number of basic requirements that people look for when considering a secondary home. By far the most important factor to consider in the location of vacation housing is the distance between the vacation home and the permanent home. The closer the two homes, the more convenient and usable is the vacation home. Usually, it is difficult to find suitable sites in close proximity to most metropolitan areas which have the desirable amenities of scenery, recreation facilities, a low to moderate selling price, and so forth. However, the Bragg Creek area, with its proximity to Calgary and its direct highway access is an exception to the usual experience in most cities.

Developers of vacation home communities who participated in a recent survey were asked to estimate the average distance between their customer's permanent places of residence and their vacation homes, both in miles and hours of driving time. The calculated averages for these two categories were 155 miles, and two hours and 55 minutes driving time. It is also considered that 200 highway miles or four hours driving time is reaching the outer limits of comfortable weekend commuting. It is the accepted rule that the closer the vacation home site is to the primary home, other things being equal, the greater will be the demand for land in that area.

The second most important criteria for vacation home location is the availability of facilities for active recreation. The following table illustrates the ranking of attracting forces for vacation home buyers by members of the National Association of Home Builders.

Attracting Force	Percent of Respondents
Lakes	60.0
River	46.7
Wooded area	33.3
Mountains	23.2
Seashore	20.0
Ski area	16.7
Golf Course	13.3
Island	6.7
Farm	3.3
Other	13.3

Water alone, however, is not the only choice criterion. Views and scenery, forests or woods, mountains or hills, skiing potential and hunting and fishing potential were all considered important. To many people, items relating to recreation appear more important than some of the more practical factors such as property costs, property taxes, or climate. This is to be expected since the whole concept of vacation housing revolves around recreation and relaxation, and developers, realizing this, search for land which is amenable to these purposes.

The results of many surveys seem to indicate that availability of water for recreation is the single most important criterion in selecting a vacation home site. Although many types of recreational activity serve as attracting forces, water-oriented activities appear to dominate. Location is not limited to areas where only natural water bodies are found since surveys indicate that many man-made lakes have been constructed. Thus, areas without natural lakes, but having topography suitable for damming and sufficient ground water, also are potential locations.

Active recreation facilities such as golf, swimming, skiing, horseback riding, and hunting and fishing seem to be more important location criteria than passive recreation amenities such as scenery. Also, the availability of recreation facilities appears to dominate the more practical items such as land costs, property taxes, and climate.

Other items attracting the vacation home family are a quiet, rural environment, familiarity with the area, and forests. These all appear secondary, however, to the availability of water.

Characteristics of a Secondary Home Development

As stated previously, the biggest problem facing the secondary home developer in both Canada and the United States is arranging financing for prospective home buyers. The three principal reasons for the difficulty in securing mortgages for secondary homes are as follows:

- (a) Vacation houses are a luxury; thus, if the economy takes a dip, the market for such houses would be poor and the lender would have no security in case of repossession.
- (b) Some vacation houses are built as shells which owners plan to finish themselves, but until they are completed, they have no mortgage value for a lender.
- (c) The market is relatively new and few lenders have had a chance to study or understand it fully.

Because of the difficulty of financing, interest rates on secondary homes borrowing are higher than on conventional home borrowing, and the repayment terms are shorter. The longest terms on secondary homes financing are 12 to 15 years.

The secondary homes market is considerably different from other markets in that the sale of a secondary home involves the sale of housing, recreation, leisure, scenery and the intangible "way of life". The house is only part of the package.

The best way to provide for the sale of secondary homes is to create a vacation home community development instead of simply trying to sell individual lots. People are normally gregarious and social in nature and want other people around even in a vacation home area. This is particularly true of wives with children who dislike being isolated and unprotected during the week while their husbands are in the city at work.

The complete vacation home community has many advantages over the scattered lot and simple subdivided tract. These advantages accrue to all participants in the market, including developer, buyer, and municipality.

Developers realize economies of agglomeration in developing large pieces of land because of savings in property costs, installation of utilities and roads, and construction of the houses. More space is available for the golf course, pool, clubhouse, and similar structures. Also, lenders are more interested in making construction and home loans when the invested capital is large and considerable security exists.

The buyer receives many more services than he normally would when building on a scattered lot or in a simple subdivided tract. Original costs are probably higher, but eventually the difference often is regained because of the enhanced value resulting from insurance of an adequate sewer and water system, improved roads, numerous recreational facilities, and other services.

The local municipality benefits by having the developer assume the costs of providing the utilities, roads, and other services. The developer usually has considerable capital invested, which implies adequate services, good

design, and thoughtful development of the land. Also, since the homes in these communities are usually more expensive and purchased by higher income families, the municipality or township receives greater return in both property taxes and expenditure patterns. This type of development would have an especially large impact on some underdeveloped rural areas where the local tax base depends on a declining agricultural industry or seasonal tourism.

Some generalizations exist concerning the typical vacation home community, including the size, capital required, development pattern, and merchandising techniques. One author considers a typical development to have the following characteristics:

- (a) a thousand acres of land, often a syndicate or form of joint venture between land developer and builders
- (b) a large portion is reserved for recreational purposes including lakes, marina, hunting preserve, golf courses, bridle paths
- (c) roads, a lodge, and some recreational facilities are constructed before any lots or homes are advertised
- (d) a semi-private community or club aspect is present which lends both a prestige and safety factor
- (e) land sales usually lead home sales, which allows families to gain a substantial equity and become committed to the area.

Candidates for Second Home Ownership in the City of Calgary

It is well established from U.S. and Canadian experience that as disposable incomes rise, there is a stronger propensity on the part of persons to own a second home and this type of acquisition becomes very marked as income rises above \$10,000 per annum for the family. There is a greater tendency to own a second home where incomes exceed \$15,000, \$20,000, \$25,000, etc., for at this stage in the earning power, families have acquired other luxury goods such as a second car, a completely adequate primary home, recreational memberships and facilities, etc. This does not mean to say there are not second home owners in the below \$10,000 income group, but these tend to be relatively fewer in number and represent people who have on their list of priority the need to get into the wilderness area or rural location for leisure time activities.

Recent experience in both the United States and well developed urban areas of Canada shows approximately 12% of families in the over \$10,000 bracket own secondary homes and this rises to 20% as income increases above \$15,000 per annum. Based on these criteria, and

the population and income forecasts shown in the following tables, the total candidates that should exist in the City of Calgary to purchase second homes over the next ten years may be estimated.

Estimated Number of Families City of Calgary

Year	Population	Persons in Families	Number of Families
1970	385,400	341,100	87,460
1971	400,800	354,700	90,950
1972	416,800	368,900	94,590
1973	433,500	383,600	98,360
1974	450,800	399,000	102,310
1975	468,800	414,900	106,390
1976	427,500	431,400	110,620
1977	507,000	442,700	115,050
1978	527,300	466,700	119,670
1979	548,400	485,300	124,430
1980	570,300	504,700	129,410

Source: (1) Dominion Bureau of Statistics, Census Data
(2) City of Calgary
(3) Travacon Research Limited

Preliminary Estimate—Middle and High Income Families —Calgary, Alberta

1970-1980*

Year	\$10,000- \$14,999	\$15,000 and Over	Total
1970	9,270	3,940	13,210
1971	9,910	4,180	14,090
1972	10,690	4,540	15,230
1973	11,500	4,820	16,320
1974	12,380	5,220	17,600
1975	13,300	5,640	18,940
1976	14,270	6,080	20,350
1977	15,300	6,560	21,860
1978	16,400	7,060	23,460
1979	17,670	7,590	25,260
1980	19,020	8,150	27,170

* Excludes approximately 13% of the population which represents those persons not living in families.

Source: (1) Dominion Bureau of Statistics Census Data & Special Reports
(2) Travacon Research Limited

**Estimated Number of Non-Family Residents
Earning in Excess of \$10,000 Per Annum
City of Calgary**

Year	Non-Family Residents	Number Earning More Than \$10,000/Annum
1970	44,300	445
1971	46,100	400
1972	47,900	535
1973	49,900	595
1974	51,800	650
1975	53,900	720
1976	56,100	795
1977	58,300	880
1978	60,600	970
1979	63,100	1,010
1980	65,600	1,180

Source: (1) Dominion Bureau of Statistics
(2) Travacon Research Limited

**Estimated Total Candidates for Second Home Ownership
City of Calgary — 1970-1980**

	Families		Non-Families			New Demand
	\$10,000	\$15,000	\$10,000			
	\$14,999	and Over	and Over	Total		
1970	1,110	790	55	1,955		
1971	1,190	835	60	2,085	130	
1972	1,280	900	65	2,245	160	
1973	1,380	965	70	2,415	170	
1974	1,485	1,045	80	2,610	195	
1975	1,595	1,125	85	2,805	215	
1976	1,710	1,220	95	3,020	220	
1977	1,835	1,315	105	3,255	235	
1978	1,970	1,410	115	3,495	240	
1979	2,120	1,520	120	3,760	265	
1980	2,280	1,630	140	4,050	290	

Source: (1) Dominion Bureau of Statistics
(2) Travacon Research Limited

From the foregoing it can be concluded that if the Calgary population and consumer spending habits conform roughly to the experience in the U.S. there are presently 1,955 Calgary candidates for second homes and

this demand will increase to approximately 2,800 candidates by 1975 and 4,000 by 1980.

Thus, due to a combination of the growth in the total population and the shift in income to the middle and higher income brackets, the total growth in the number of new candidates for secondary home ownership in the Calgary area is expected to reach 870 persons over the next five years. There should be 130 new prospective purchasers in 1971, with increases each year to a net additional 215 new purchasers in the year 1975. It must be realized that this by no means defines the total market for second homes in Calgary, but only indicates the net addition to the total number of purchasers that are likely to enter this market each year.

**Inventory of Present Secondary Homes and Lot Owners
—Greater Calgary Area**

The tax assessment records of various lakes in British Columbia and Alberta were examined to determine the number of Calgary residents who presently own vacation homes. The results of this survey are as follows:

**Estimated Calgary Residents Owning Property at Selected
Lake Resorts in Alberta and British Columbia**

Lake	Vacant Lots 1970	Summer Homes 1970	Total 1970
Chestermere	14	256	270
Sylvan	70	250	320
Ghost	8	52	60
Gull	5	60	65
Kananaskis	10	30	40
Windermere	90	190	280
Columbia	10	15	25
Wasa	3	5	8
Shuswap	57	28	85
Christina	5	5	10
Rosel/Slocan	3	4	7
Kootenay	13	12	25
Kalamalka	2	3	5
Mara	40	10	50
Total	330	920	1,250

When compared to total demand for secondary homes it is evident that only about 60% of the existing

candidates have bought a lot or home, indicating that there is and has been insufficient supply. The prospects over the next few years are that this situation will grow tighter as more and more candidates enter the secondary homes market.

The Major Developed and Planned Secondary Homes Locations Available to Calgary Residents

Developed Locations

(a) Chestermere Lake Area

Chestermere Lake and the surrounding land is basically an irrigation reservoir owned by Western Irrigation Ltd., a subsidiary of Canadian Pacific Railway Co. Over the years waterfront lots with frontages from 35 to 100 feet have been leased to the public on 5-year renewable leases as summer cottage sites. The leasing fees range from \$60.00 to \$200.00 per lot per year and the most recent building regulations now require that a cottage has to be erected on the site within two years of signing or the lease is forfeited.

The Lake is approximately three miles long, one half mile wide and about 30 feet deep in its deepest parts. The two principal attractions of Chestermere Lake are the lake setting and associated opportunities for water-oriented recreation, and its close proximity to Calgary, that is, approximately a 20-30 minute drive from the city. However, the area cannot be considered as scenically attractive secondary homes development. Furthermore, the absence of controlled construction codes in the early years of the development has led to a very unappealing situation which gives many parts of the development the appearance of a "shack town". Notwithstanding these esthetic drawbacks the lake front area is completely occupied by some 250 summer cottages and in fact, virtually no more lots are available for leasing in this area — the last 30 lots having been disposed of during the summer of 1970. Recent prices paid for leases on Chestermere have been as high as \$3,000.

(b) Sylvan Lake Area

Sylvan Lake has traditionally been a popular vacation homes area for Calgarians due mostly to its proximity to the City and the lack of any other lakes close to the City. However, its recreational potential is limited not only in the number of activities available but also for the time they are available. Basically, Sylvan Lake is a summer-oriented area. The fact that Sylvan still has lots available attests to the limited suitability of the area and it should not be a competitive threat to a proposed Bragg Creek secondary home development. Gull Lake, which has a major water level problem with a consequent receding shore line, is no longer a desirable lake for secondary cottages. Prices for waterfront lots at Sylvan range between \$4,000 and \$6,000.

(c) Windermere Area

The Windermere area offers three bodies of water—Lake Windermere, Columbia Lake and Wasa Lake. Lake Windermere is considered to be the best recreational lake and is by far the heaviest populated in terms of secondary homes. This area like the Sylvan area is very popular with Calgary residents and although it is further distant from the City than Sylvan, it offers the opportunity for year-round recreation which is an added benefit to secondary home owners. At the present time there are approximately 150 to 200 potential or subdivided lots in assorted developments providing at best limited services (roads, hydro, and sometimes water) for sale in the Windermere area. Prices on these lots range from \$800 to \$6,000 depending on their location. The very few lake-front lots that are still available on Lake Windermere, however, range in price from \$6,500 to \$11,000. The major disadvantage of the Windermere area is its distance from Calgary — 170 miles — and its consequent three-and-a-half hour driving time. To many people this distance makes Windermere unsuitable for weekend commuting.

(d) Shuswap Lake Area

Waterfront property at Shuswap Lake sells for about \$12,000 while the back lots average about \$5,000 per lot.

The major development on the lake at present is Anglemont Estates, who claim to have sold 480 lots, 60% of them to Calgary residents. Eventually their development expects to have about 1,200 lots. These figures are not substantiated by the Tax Assessment Rolls in Kamloops and therefore should be treated with a certain amount of caution. Shuswap is more than seven hours driving distance from Calgary and this fact alone should offset any competitive advantages the area may have.

(e) Okanagan Lake Area

Prices range from \$7,500 for a view lot to \$12,000 for a waterfront property around the lake. Although the lake has excellent facilities, it is becoming harder to get good lots and this, coupled with the excessively long driving time from Calgary, eliminates this lake from becoming a popular secondary homes location for Calgarians.

(f) Mile 108 in B.C. Cariboo

Mile 108 is a huge secondary homes development, catering almost exclusively to Vancouver residents, situated at Mile 108 on the Cache Creek-Prince George Highway. It is approximately 550 miles from Calgary and in no way should be in competition with the proposed Bragg Creek secondary homes development. It is interesting from the point of view that the developing company has sold over 700 lots in the space of one year in a development which resembles more a subdivision than a vacation homes complex. The development has a number of small lakes and a first-class golf course on the property but

otherwise has very little to offer. Prices range from \$5,000 to \$10,000 depending on view. There are no waterfront lots.

Undeveloped Potential Locations

(a) Kokanee Springs at Crawford Bay on Kootenay Lake

The development plans for Kokanee Springs call for it to become a major destination resort area with a full range of recreational facilities. To date some \$3,000,000 has been invested in land and improvements. For a considerable time now, plans have been examined for the construction of a road from Kimberley running west to Kootenay Landing. This would reduce the driving time from Calgary to approximately five hours and would definitely open up a major new secondary homes area for Calgarians.

(b) North Arm of Kootenay Lake

The B.C. government has shown interest in construct-

ing a new road from the vicinity of Windermere (probably Invermere) running west to Lardeau and down the west side of the lake to Balfour. If this road is built, it would open up the whole north arm of Kootenay Lake for secondary homes development with some appeal to Calgarians because of the five-hour driving time.

(c) Indian Reserve Land along Lake Windermere

The Indian Beach Park development on a small parcel of Indian land, on the south-east shore of Lake Windermere, shows that the Indians are predisposed to developing their land and therefore it is possible that a developer could establish a major secondary homes project on this land. If such a development were to occur, it could open up as many as 1,000 lakeshore or lakeview lots to the Calgary market.

The following table summarizes the major competitive secondary homes developments and compares driving times and price of lots at each development:

Distances and Driving Times from Calgary to Selected Secondary Homes Locations

Area	Distance from Calgary	Driving Time from Calgary	Price Range for Subdivided Lots
Sylvan Lake	100 miles	1.7 hours	\$4,000 to \$ 6,000
Windermere Area	170 miles	3.5 hours	\$1,000 to \$11,000
Shuswap Lake	360 miles	7.1 hours	\$5,000 to \$12,000
Okanagan Lake	420 miles	8.4 hours	\$7,500 to \$12,000
Mile 108	550 miles	11.0 hours	\$5,000 to \$10,000
Kokanee Springs (Kootenay)	370 miles	7.3 hours	\$5,000 to \$10,000
*With Cut-off	250 miles	5.0 hours	\$6,000 to \$12,000

* This is a possibility within the next five to ten years.

PROPOSED SECONDARY HOMES DEVELOPMENT AT BRAGG CREEK

Suitability of Area and Site

From the analysis detailed in the previous section of this report it is evident that from the standpoint of proximity to the City; climate; land; summer and winter recreational potential; scenery and terrain, the Bragg Creek area could be extremely popular as a year-round recreational setting for the Calgary market. The absence of a large body of water on the property is certainly somewhat of a drawback. However, it must be remembered that there are no competitive or potentially competitive secondary homes developments as close to Calgary, nor with the recreational scope that is available at Bragg Creek.

Therefore it is concluded that because of the shortage of suitably developed scenic secondary home sites within a reasonable driving distance of the City, the Bragg Creek area with its 40-minute driving distance from downtown Calgary possesses the necessary ingredients to capitalize on the very significant demand for secondary

home sites which exists in the Calgary area. However, it must be emphasized that only through a properly planned and aggressively marketed secondary homes community can the Sarcee Band expect to create a highly attractive and financially successful development in the Bragg Creek area of the Reserve.

Development Concept for the Bragg Creek Area

It is not the purpose of this report to prepare a master plan for the development of the Bragg Creek property as a secondary homes community. However, in determining the general economic feasibility of the proposed project certain development conditions have to be specified in order to be certain that the market potential for the project will be at the highest level possible. Thus the following should be regarded as preliminary planning concepts with "order of magnitude" cost estimates only. Detailed economic and engineering planning is necessary before refined designs and cost estimates can be completed.

It is considered that the Bragg Creek property lends itself very well to the development of two distinct secondary homes community concepts:

(a) Recreation Communities

An arrangement which has proven very successful elsewhere in North America and which is ideally suited to the Reserve property between the Bragg Creek Highway and the Elbow River is a series or grouping of 30 to 40 secondary home sites around a private recreation core. The home sites in these groupings are connected by well maintained roads, adequately serviced with electricity and water, and in some cases serviced with such amenities as garbage collection, grounds maintenance, and anti-vandalism security inspection in the off-season. In addition, each grouping or community of home sites is provided with a recreation core area consisting of children's wading pool, a heated swimming pool, sun deck, barbecue pit, and other recreation facilities.

In other words, a number of small secondary homes communities are formed within an overall secondary homes development plan. Each small community can then be designed and planned to conform to the needs and financial means of the particular income group which will be occupying that community.

It is conservatively estimated that the land requirements for this type of secondary homes development would average approximately two home sites per acre.

(b) Small Back Acreages

Certain portions of the Reserve, particularly the area east of the Bragg Creek Highway extending into the center of the Reserve, is well treed and somewhat mountainous. This area is ideally suited for subdivision into three to five acre home sites, where the owner would be able to keep his own horse and generally enjoy more seclusion and privacy than is afforded in the recreation communities.

These home sites would be serviced with access roads and electricity but would not be provided with a recreation core similar to those provided to the recreation communities.

It is estimated that the land requirements for this type of secondary homes development would average approximately five acres per home site.

To serve as a focal point for this whole secondary homes development a recreation and commercial centre would be provided consisting of a large swimming pool, a clubhouse, tennis courts, pitch-and-putt golf course, sauna bath, riding club and other recreation-related facilities. As the secondary homes population increases through the sale of home sites, commercial facilities such as a small store, snack bar, service station, etc. could be added to the complex.

A preliminary estimate of the probable capital costs required to develop the Bragg Creek area into a marketable secondary homes community is listed below. It should be noted, however, that these cost estimates are not based

on detailed engineering studies, but rather are order of magnitude estimates of the costs which could be expected in this type of development. Not until engineering and design work has been completed can refined capital cost estimates be made.

(a) Road Construction and Landscaping:

Each 40-home site community would require an access road from the highway, plus a road system within the development. A maximum of one mile of gravel road would be required per community and the capital cost involved would be about \$11,500. In addition approximately \$4,000 or \$100 per home site is budgeted for landscaping the recreation core. It is estimated that road construction costs for the small back acreages would average \$400 per site.

(b) Electricity and Water:

For home sites a construction contribution per site of approximately \$150 is required by Calgary power for electricity distribution in the Bragg Creek area, and an average of \$720 per site is budgeted for the provision of water services. A power cost of \$250 per site has been estimated for the small back acreages.

(c) Recreation Core:

It is estimated that the cost of constructing a heated swimming pool capable of serving 40 home sites would be approximately \$20,000. An additional \$5,000 is budgeted for the other recreation facilities which would be provided for each 40 home site community.

(d) Recreation and Commercial Centre:

The scope and size of the recreation and commercial centre is necessarily related to the volume of sales of home sites. In other words, the more home sites occupied in Bragg Creek, the larger and more extensive the recreation and commercial centre will be. For budgeting purposes it is proposed that a planned capital expenditure program for this centre be directly related to sales on the following basis:

- (i) After 100 home sites are sold, \$50,000 will be spent.
- (ii) After each additional 100 home sites are sold an additional \$25,000 will be spent.

The Role of the Sarcee Band as Land Developer

It is recognized that the members of the Band regard the Reserve land as their major resource or asset and that they have no intention of selling any portion of their land to outsiders. However, it is important to also recognize that their land in the Bragg Creek area is producing very little if anything in the way of revenue to the Band at the present time.

It has been pointed out in this section that the Bragg Creek land if properly developed could become a very valuable resource to the Band through its development as a "leisure time" recreation-oriented secondary homes

community. In order to accomplish this development and enable the Bragg Creek property to produce both revenue and jobs for the Band, the Band members will have to make the decision to lease home sites on the Reserve to outsiders; principally Calgarians.

If and when this decision is made the Sarcee Band or its wholly-owned development company would become the developer of the secondary homes project and would lease secondary home sites in the Bragg Creek area on a long-term basis, probably in the range of 35 years. In addition they would undertake to provide and operate the recreation and service facilities described in the foregoing section of this report.

Estimated Demand for Vacation Home Sites at Bragg Creek

As stated in the previous chapter of this report, the major market for secondary home sites on the Bragg Creek property is the City of Calgary. It has been estimated that there are approximately 835 Calgary candidates for secondary homes at the present time and this demand will likely increase to at least 1,700 by 1976 and 2,800 by 1980. Therefore it is considered that with a development program along the lines described in this chapter,

with proper advertising and sales promotion, and with an aggressive marketing approach, a minimum of 500 home sites and a maximum of 1,250 home sites could be sold on the Sarcee Reserve over the next ten years.

It is anticipated that the demand for home sites in the recreational communities will be much higher than the demand for small acreages and for purposes of this report it is estimated that home site sales will be in the ratio of four to one for recreational lots; or in other words, four recreational lots will be sold for every small acreage lot sold. On this basis, a minimum of 700 acres and a maximum of 1,750 acres of Sarcee Reserve land in the Bragg Creek area would be committed to leases of approximately 35 years.

It is conservatively estimated that the proposed secondary homes development at Bragg Creek could capture at least 10% of the net effective demand for vacation home-sites in the Calgary market at the following price levels:

Recreation Community Lots	\$3,500
Small Acreages	\$8,000

Based on these criteria the estimated annual sales volume appears in the following table.

Estimated Demand and Annual Rate of Vacation Housing Lot Sales — Bragg Creek Area

Year	Total Demand Calgary Residents	Estimated Lot or House Owners	Net Effective Demand	Estimated Lot Sales
1971	2,085	1,250	835	80
1972	2,245	1,330*	915	90
1973	2,415	1,420*	995	100
1974	2,610	1,520*	1,095	110
1975	2,805	1,630*	1,175	120
1976	3,020	1,750*	1,270	130
1977	3,255	1,880*	1,375	140
1978	3,495	2,020*	1,475	150
1979	3,760	2,170*	1,590	160
1980	4,050	2,330*	1,720	170
				—
				Total Potential Sales
				<u>1,250</u>

* Including persons who will have purchased home sites at Bragg Creek

Economics of Secondary Homes Development

Although the market would indicate the likelihood of the Sarcee being able to sell 1,250 secondary homes lots over a 10-year period, in the interests of being conservative, the economic analysis of the project will be based on 500 units.

On the basis of a 500 lot development over a ten year period, 400 of which would be $\frac{1}{2}$ acre home sites

and 100 of which would be small acreages, revenue potential is estimated based on the following assumptions:

- Servicing cost per home site including roads, water, electricity and landscaping is \$1,300.
- Servicing cost per acreage site including roads and power is \$650.
- Recreation facility costs for each 40 unit cluster are \$25,000.

- d) Recreation and Commercial Centre development will be staged so that \$50,000 will be spent after 100 home sites are leased, and an additional \$25,000 will be spent as each additional 100 home sites are leased.
- e) Lot lease rates for a 35 year lease will be:
 - recreation community lots \$3,500.
 - small acreages \$8,000.
- f) Lot lease rates will be increased by 25% after 250 lots are leased.
- g) Lots will be leased on the basis of 25% down, and the balance over 10 years at 8% interest.
- h) Administration and development expense will consist of the development of a master plan in the year 1971 and a full time manager thereafter.

- i) It is assumed that systems operation and maintenance costs will be recovered by an annual service charge over and above the lease rate.
- j) Expenditures for installation of services, utilities and recreation facilities will be made in units of 50 home sites.
- k) Sales expenses will consist of an advertising budget of \$10,000 in 1971 and \$3,000 per year until the lots are sold; in addition sales commission of 5% of gross revenue will be paid.

The foregoing assumptions form the basis for the following tables of net cash inflow, net cash outflow, and estimated net cash flow for the proposed secondary home development on the Sarcee Reserve.

Estimated Net Cash Inflow
Proposed Secondary Homes Development
Sarcee Reserve

Year	Lot Sales	Down Payment	Annual Installments	Annual Interest	Annual Cash Inflow
1971	32	\$ 35,000	\$ —	\$ 4,100	\$ 39,100
1972	36	40,000	10,400	8,300	58,700
1973	40	44,000	22,200	16,900	83,100
1974	44	49,000	35,400	25,700	110,100
1975	48	54,000	50,000	34,600	138,600
1976	52	58,000	65,900	43,300	167,200
1977	56	75,000	83,300	51,900	210,200
1978	60	79,000	105,800	63,300	248,100
1979	64	83,000	129,600	73,800	286,400
1980	68	89,000	154,700	83,500	327,200
1981	—	—	181,400	92,500	273,900
1982	—	—	170,000	78,000	248,000
1983	—	—	159,200	64,400	223,600
1984	—	—	146,000	51,700	197,700
1985	—	—	131,400	40,000	171,400
1986	—	—	115,500	29,500	145,000
1987	—	—	98,100	20,200	118,300
1988	—	—	75,600	12,400	88,000
1989	—	—	51,800	6,400	58,200
1990	—	—	27,700	2,200	29,900
TOTAL	500	\$606,000	\$1,814,000	\$802,700	\$3,222,700

Estimated Cash Outflow
Proposed Secondary Homes Development
Sarcee Reserve

Year	Admin. & Develop.	Roads, Water & Electricity	Recreation & Comm. Facil.	Expenses	Annual Cash Outflow
1971	\$ 20,000	\$ 60,000	\$ 25,000	\$ 17,000	\$ 122,000
1972	10,000	60,000	25,000	10,900	105,900
1973	10,000	60,000	75,000	11,800	156,800
1974	10,000	60,000	25,000	12,800	107,800
1975	15,000	60,000	50,000	13,600	138,600
1976	15,000	60,000	25,000	14,600	114,600
1977	15,000	60,000	50,000	18,000	143,000
1978	15,000	60,000	25,000	18,800	118,800
1979	15,000	60,000	50,000	19,700	144,700
1980	15,000	60,000	25,000	20,800	120,800
1981	15,000	—	25,000	—	40,000
1982	15,000	—	—	—	15,000
1983	15,000	—	—	—	15,000
1984	15,000	—	—	—	15,000
1985	15,000	—	—	—	15,000
1986	15,000	—	—	—	15,000
1987	15,000	—	—	—	15,000
1988	15,000	—	—	—	15,000
1989	15,000	—	—	—	15,000
1990	15,000	—	—	—	15,000
TOTAL	\$290,000	\$600,000	\$400,000	\$158,000	\$1,448,000

Estimated Net Cash Flow
Proposed Secondary Homes Development
Sarcee Reserve

Year	Annual Cash Flow			Cumulative Net Cash Inflow
	Inflow*	Outflow*	Net	
1971	\$ 39,000	\$ 122,000	\$ (83,000)	\$ (83,000)
1972	59,000	106,000	(47,000)	(130,000)
1973	83,000	157,000	(74,000)	(204,000)
1974	110,000	108,000	2,000	(202,000)
1975	139,000	139,000	—	(202,000)
1976	167,000	115,000	52,000	(150,000)
1977	210,000	143,000	67,000	(83,000)
1978	248,000	119,000	129,000	46,000
1979	286,000	145,000	141,000	187,000
1980	327,000	121,000	206,000	393,000
1981	274,000	40,000	234,000	627,000
1982	248,000	15,000	233,000	860,000
1983	224,000	15,000	209,000	1,069,000
1984	198,000	15,000	183,000	1,252,000
1985	171,000	15,000	156,000	1,408,000
1986	145,000	15,000	130,000	1,538,000
1987	118,000	15,000	103,000	1,641,000
1988	88,000	15,000	73,000	1,714,000
1989	58,000	15,000	43,000	1,757,000
1990	30,000	15,000	15,000	1,772,000
TOTAL	\$3,222,000	\$1,450,000	\$1,772,000	

* Rounded to closest \$1,000

Advantages to the Sarcee Band

By far the most significant advantage to the Band through development of a segment of the Bragg Creek property into a secondary homes project is the net cash inflow to augment diminishing Band operating funds. Moreover, it should be realized that these earnings are based on a modest scale development of 500 home sites, when in fact the Calgary market will easily support a development at least twice this large. Therefore, annual earnings could be double those indicated. It should be pointed out that at most 2,000 acres of this portion of the Reserve is all that would be required to generate this very attractive level of earnings.

A secondary benefit to the Band is the likelihood of this development creating a market for pre-fabricated homes, a development which could enhance the growth and profitability of the prefab housing factory located on the Reserve and in whose success the Band has a very significant interest.

Other benefits to the Band in this development lie in the area of employment and payroll. For example, a project manager and staff will be required over the life of the project and these positions should be filled by members of the Band after they have received the necessary

training. Similarly Band members could act in a marketing capacity and participate in the budgeted \$140,000 in sales commissions.

Finally, it should be emphasized that the development of a secondary homes community in the Bragg Creek area will create a summer population of some 1,500 to 2,000 people, which in turn will create a demand for a variety of services such as a filling station, a drive-in restaurant, small grocery store, etc. As the owners of the land in this area, it would be completely reasonable to expect members of the Sarcee Band to capitalize on these commercial opportunities as the market developed.

RECOMMENDATIONS

On the basis of the foregoing, it is recommended that the Sarcee Development Board take immediate action to secure the necessary capital and land to enable development of a Tent and Trailer Park on Fish Creek and a Secondary Homes Development in the Bragg Creek Area as outlined above. Present indications are that development capital will be available from the Department of Regional Economic Expansion through new legislation which is expected to be approved in the near future.

SECTION IX — LAND USE PLANNING

In order to promote and control orderly development on the Sarcee Reserve, it is recommended that a system of Land Use Control be instituted. The proposed Land Use Map forming part of this report designates Land Use Areas in general terms. This plan should be reviewed by Sarcee Council and the Sarcee Development Board and should then be further refined and adopted by By-law. This Land Use Plan will then provide a firm basis for decision making by Council in the future. It must be noted that adoption of such a By-law does not prejudice land use for all time. As circumstances change the By-law, and thereby the Land Use Plan, can be amended as required.

The proposed Land Use Plan suggests the following zones for land use categories:

ZONE (RFR) RANCHLAND — FORESTRY — RECREATION

The purpose of this zone is to improve the rural atmosphere and natural amenities of the area by encouraging the production of timber on areas of poor soil that are sub-marginal for farming but suitable for forestry. Other purposes are to enhance recreational values, to provide grazing, to encourage wildlife, and to maintain a low density of population except for areas designated for secondary homes.

Permitted uses in this zone would include grazing, growing of forest products, forest industries, natural resource extractive industries, riding trails, hiking trails, snowmobile trails, fishing, camping in selected areas, horse rental concessions, horse boarding, and those buildings and services necessary for the foregoing.

ZONE (A) AGRICULTURAL

The purpose of this zone is to preserve the rural character of the area and to keep and expand productive farming areas by reserving the more fertile soils for the growing of crops. The less fertile areas can be used for pasture purposes. A further purpose is to ensure that the area does not become a dumping ground for land uses not wanted elsewhere. The area is to be considered as a general farming area and land uses compatible to agricultural activities should be allowed. Uses detrimental to the use of land for agriculture should be prohibited.

Permitted uses in this zone would include extensive grazing, extensive cultivation, nurseries, green houses, turf and tree raising, dairying, poultry raising, feed lots (special permits), riding academies and stables, sale and storage of fodder, natural resource extractive industries, and buildings and services necessary for the foregoing.

ZONE (AR) AGRICULTURAL — TRANSITIONAL RESIDENTIAL

The purpose of this zone is to preserve the agricultural character and the asthetic values of the area until such time as the Sarcees see fit to develop the areas for urban use. This zone will not restrict development on the reserve, but will of necessity only permit development compatible with the present and proposed development of Calgary.

Permitted uses within this zone will include grazing, cultivation, nurseries, dairying, poultry raising, feed lots (special permits), riding academies, sale and storage of fodder, natural resource extractive industries, mobile home parks, trailer parks, light industrial parks, and buildings and services necessary for the foregoing.

ZONE (IT) INDUSTRIAL AND TRANSPORTATION ZONE

The purpose of this zone is to provide a number of sites which are amenable to the type of industrial development in which the Sarcee people are interested. Permitted uses within this zone would include automobile repair and body shops, cold storage plants, material storage, warehousing storage, wholesale stores, machine and welding shops, manufacturing plants, public utility installations, airport air terminals, landing strips, uses which in the opinion of the Development Board are similar to any of the foregoing, and those buildings necessary for the foregoing uses.

ZONE (T) TRAILER PARK ZONE

The purpose of this zone is to provide an area for mobile homes which would be expected to remain on site for at least three months. This area will be designed to allow for all of the residential amenities found in the most advanced mobile home parks.

Permitted uses within this zone would include mobile homes, parks or playgrounds, and any building necessary for the foregoing uses.

ZONE (OCA) OVERNIGHT CAMPING AREA

The purpose of this zone is to provide an area for the siting of tents, tent campers, and holiday trailers. The area would provide for the use of sites for periods of from one to fourteen days, although longer stays could be arranged at the discretion of the Development Board.

Permitted uses within this area would include tents, tent campers, holiday trailers, recreational vehicles, parks or playgrounds, and any building or service complementary to the foregoing uses.

SARCEE INDIAN RESERVE

PROPOSED LAND USE PLAN

LEGEND

- Present Boundary of Reserve
- Military Lease
- Paved Roads
- Gravelled Roads
- Existing Houses
- Ranchland, Forestry - Recreation
- Agriculture
- Agricultural - Transition Residential
- Future Urban Development
- City Boundary



ZONE (FP) FLOOD PLAIN ZONE

The purpose of this zone is to prevent people from building structures wherever flooding may occur. It is also important to preserve the trees, foliage and grasses that act as a natural barrier to the erosion of soil and perform a useful job as a flood restraint.

Permitted uses within this zone would include seasonal camp sites, in selected areas, seasonal parks, hiking, riding, passive recreation, and grazing.

ZONE (RS) SECONDARY HOMES

The purpose of this zone is to provide a much needed development area for secondary homes within a short drive from Calgary. Sites are chosen which will provide for both semi-urban clusters of secondary homes on one half acre sites, and rural secondary home sites on five acre parcels.

Uses permitted within these areas will include the erection of cottages for non permanent residence, parks and playgrounds, and utility buildings or accessory buildings used in conjunction with the foregoing.

ZONE (CR) CONSERVATION-RECREATION

The purpose of this zone is to maintain the natural tree and foliage cover of the Elbow River, Fish Creek, and other streams for the preservation of the banks from erosion. With the exception of summer cottage sites, all development including cultivating operations, crop spraying or the use of artificial fertilizers would be prohibited within a minimum of two hundred feet from the top of banks.

Uses permitted within the zone would include passive recreational uses such as fishing or simple meditation, hiking, cycle or equestrian trails and parks.

SECTION X — EMPLOYMENT POTENTIAL

This study has outlined a number of development possibilities on the Sarcee Reserve. It is the intent of this section to briefly summarize all of the development opportunities in which the Sarcee people have indicated an interest, in terms of the employment potential offered by

each development. An estimate will also be made of "spin-off" employment potential, or jobs which will be created because of the existence of the primary development under consideration.

Project	Capital Required	Employment Potential (Man-Months/Year)	Season
Logging*		25	Winter
Range Management		24	Summer
Forage Operation (2—500 Acre Operations)	\$ 36,000	32	Summer
Cow-Calf Operation (3—500 Head Operations)	558,000	108	Year-Round
Mixed Farming (5 Operations of 100 Cow Herd Plus 700 Acre Farm)	220,000	180	Year-Round
Horse Operation	39,000	12	Year-Round
Mobile Home Park (Stage 1)	325,000	24	Year-Round
Tent and Trailer Park	108,000	36	Year-Round and Summer
Secondary Homes Development	200,000	96	Year-Round
Miscellaneous Service—Commercial Enterprises			
Service Stations	\$ 20,000	24	Year-Round
Welding Shop	10,000	24	Year-Round
Handicraft Sales	5,000	12	Year-Round
Handicraft Production	1,000	72	Year-Round
Retail Sales	40,000	72	Year-Round
Recreation Industry	20,000	48	Year-Round
TOTAL POTENTIAL**		645 man months per year	

* existing enterprises

** not including Band administrative staff and current industrial development

From the foregoing it may be seen that there is a substantial employment potential on the Sarcee Reserve. Assuming a hypothetical situation whereby all of the listed projects were initiated in the immediate future, then a capital infusion in the order of \$1.6 million would result in the creation of approximately 56 full-time job equivalents, or approximately one full-time job for each \$28,000 of capital investment.

In fact, the sequence and timing of Reserve development will be at the discretion of the Sarcee Band members and the Sarcee Development Board. It is expected, however, that initial development programs (other than those aimed at expansion of existing agricultural enterprises) will concentrate on those enterprises offering the

highest return on investment, such as the Mobile Home Park, Tent and Trailer Park, and Secondary Homes Development. These developments will provide capital which may be reinvested in other enterprises, and, equally as important, will provide capital for non-profit social development requirements such as a recreation complex, library, and similar undertakings.

SKILL DEVELOPMENT AND TRAINING REQUIREMENTS

In order to take full advantage of the employment potential which will be created on the Sarcee Reserve, Band members will have to develop specific skills which will in turn require appropriate training.

Skills which will be employed in the primary commercial developments are as follows:

- Management
- Simple accounting
- Sewer and water systems maintenance
- Landscape maintenance
- Sales
- Public relations
- Decision making

In the area of agricultural development, the following skills are needed:

- Record keeping
- Record analysis
- Technical skills in the husbandry of cattle, grain and forage.

In both commercial and agricultural areas, the people must develop the social and political awareness necessary to effectively introduce individual incentive into a communal situation.

Specific training requirements will depend upon the present skill level of each individual, as opposed to the skills required for any particular job in which that individual is interested. In general terms however, it is felt that training programs should rely strongly on "on-the-job" training. The Band should investigate the possibility, in conjunction with Canada Manpower, of placing members in jobs throughout the Calgary area which will provide the work experience necessary for the particular job in

which the individual is interested. In addition, full use should be made of existing training programs offered by Canada Manpower, the Department of Indian Affairs, and such outside agencies as the Western Canada Sewer and Water Conference which holds annual workshops for maintenance staff.

In the agricultural area, courses combining discussions with actual field operating instruction (handling the cattle, or on the tractor) are recommended. A one week cattle management course is already scheduled, although if employment training in agriculture is seriously undertaken a longer course period in the order of six weeks will be required.

The principles taught on the courses and the examples used must be practical under Reserve conditions. Because reading and arithmetic skills are limited, special adaptations of curriculum must be made. Farm and Ranch Management Consultants have begun such adaptations in regard to the one week cattle management course referred to above, and in regard to Manpower Farm Management training courses for low capital investment farm operators currently running in Alberta.

If the training courses are implemented, there should be a measurement of achievement. Such measurement would be by means of simple case studies and "show how" field observation (with the cattle or on the tractor). A course participant's abilities can be evaluated on this basis and might be considered as a prerequisite for a credit application to start his own enterprise or become part of any joint endeavour.

SECTION XI — SUMMARY AND RECOMMENDATIONS

The Sarcee Reserve has an almost unlimited potential for a number of various types of development, but development must in fact be limited to conform to the goals and abilities of the Sarcee people.

The Sarcee people have the normal problems of any small community composed mainly of a few large family groups. In addition, they are operating under handicaps brought about by social alienation and generations of living within a welfare system. This has inevitably led to mistrust of non-Indians and a strong reluctance to alienate Indian lands for extended periods of time.

There has been little self initiated development on the Reserve. This has been due in the past to lack of leadership and extremely poor communications between Council and Band members. The Band's current economic situation however, in which the Band's trust account is being rapidly depleted, is providing an incentive for revenue producing development on the Reserve.

Sarcee children are all educated off the Reserve within the City of Calgary school system, a situation which probably represents the most fully advanced form of integrated education of any reserve in Alberta. The most significant general observation forthcoming from the educational portion of this study is that there seems to be a process of progressive alienation from school; progressive educational retardation and growing frustration for a large number of Indian students as they move from kindergarten through to high school. One reason for this appears to be the difficulty on the part of the student of finding a socially acceptable personal and group identity in the Calgary school system and in the community. Recommendations for alleviation of this identity crisis include the promotion of parental familiarity with the school system, the development of an extra curricular school after school hours for language and cultural instruction, the use of itinerant teacher aides who could assist children with school work during evening hours, and the establishment of a buddy system so that children can be assisted by other children in the schools.

The Sarcee Reserve land has a capability of producing forage crops, grain, native forage, trees, wildlife, and has potential for outdoor recreation. Although there is some good soil, the climate (resulting from its elevation), is such that the growing season is not long enough for cereal crops nor most other farm crops except short season crops such as oats, barley and hay. Over half of the area is too steeply rolling to be cultivated successfully and is more suitable to wild land development. This land will yield grazing, forest products, and wild game, and presents a topography suitable for outdoor recreation such as hunting, snowmobiling, and trail riding. The entire

Reserve is "good" to "excellent" for a cattle and horse range.

On the rest of the Reserve the greatest land potential is for raising livestock; under present circumstances mostly cattle or sheep. Some horses will fit into the picture and possibly the sale of some hay and feed grain. The wild land, besides supplying the summer pasture for livestock, will produce some deer and elk for hunters, some wood products, and an area where outdoor recreation of a dispersed type might be developed (trail riding in summer and snow vehicle runs in winter are examples).

A policy of integrated land use management is recommended. The range for domestic livestock, the game range, lumber and wood production and outdoor recreation can all be integrated. In many cases the same acre of land will serve all four purposes. Take for example the mixed Spruce/Aspen forested areas which are now growing White Spruce trees suitable for saw logs. Deer seek shelter there and browse the shrub and leafy undergrowth. Cattle use the grassy openings and winter snowmobile cruising favors these areas.

Specific enterprises which indicate the most promise in terms of financial return and Band member interest include:

- a) A 500 acre hay operation which would yield a net profit to operator of approximately \$4,000 with a return to Band of \$3,000 for land rental and an additional return of \$1,000 to Band members who would be hired for one month.
- b) A 500 head cow-calf operation which on the basis of 1969 prices would return \$10,000 to labor (three men), and return \$4,000 per year to the Band for pasture rentals.
- c) A 700 acre mixed farming operation which would return \$15,400 to labor (three men) and \$5,000 to the Band.
- d) A 35 head horse rental operation on 160 acres of improved pasture which would return approximately \$3,500 to the operator with a return to Band for pasture rental of approximately \$1,000.

In industrial, urban and commercial development there lies the greatest potential for income, employment, and training opportunities for the Sarcee people. When considering development in all of these areas, it is essential that the highest degree of liaison and cooperation be maintained between the Reserve, the City of Calgary and surrounding municipalities.

Industrial development should be limited to clean industries which will not compromise other types of de-

velopment opportunities on the Reserve. Industries should be selected which will employ a high percentage of local labor.

There is a large potential return to the Band in revenue and employment through the development of land in the east end of the Reserve for urban use. The area is ideally suited for a logical continuation of the growth of the City of Calgary to the southwest. There would appear to be a market for the complete development of one section of Reserve Land every five years for residential purposes. It is estimated that each section of developed land would yield approximately \$410,000 per year to the Band. In addition to lease revenue, urban development on the Reserve would offer numerous employment opportunities for Band members in various construction fields. Other employment opportunities would also become available upon completion of the development, within service and commercial functions.

The development of a mobile home park appears to have very good potential and the idea of such a development has received excellent acceptance from the Band. A properly developed mobile home park, with paved streets, landscaped lots, garden and recreation areas, swimming pool, community hall and shopping centre can be as attractive as any other subdivision, and can be designed to allow future transition to permanent urban development. The immediate development of a 125 lot first phase of a mobile home park is recommended. Total annual costs of this first phase are estimated at \$43,500, while annual revenue, assuming 90% occupancy and a rental rate of \$55 per month is estimated at \$74,250.

There is considerable potential for both summer and winter recreational activities on the Sarcee Reserve. The Bragg Creek area in particular provides a very attractive setting for many outdoor recreational pursuits.

Development of a complete nine hole golf course was examined and found uneconomic unless extremely low cost financing can be obtained or unless the City of Calgary agrees to participate in the financing of such a development.

A 30 to 50 acre site along Fish Creek, in the east end of the reserve, would be an ideal location for the establishment of a first class tent and trailer park operation. It is recommended that such an operation be developed as a franchise of a large international franchise chain, such as Kamp Grounds of America, commonly referred to as "KOA". With this international identification and the control standards of quality which membership in such a franchise organization guarantees, the typical camping tourist will have no hesitation in venturing three miles off the highway to stay overnight in what he knows will be first class camping accommodation. Estimated capital cost for the development of a 150 site Tent and Trailer Park in the east end of the Reserve is \$108,000.

Total annual revenues are estimated at approximately \$87,000, while total annual operating expenses, including \$8,400 in salaries and wages, are estimated at \$58,000, indicating a net operating income before taxes, depreciation, and interest of approximately \$29,000 per year. This would appear therefore, to be a very attractive business opportunity for the Band.

A brief market survey indicates a demand in the Calgary area for secondary home sites of some 700 units in 1970 increasing to approximately 2,800 by 1980. This demand is composed of two basic components; a demand for small half acre sites clustered around central recreational and community facilities, and a demand for small back acreages in the order of 5 acres each. From the standpoint of proximity to the City, climate, land, summer and winter recreational potential, scenery and terrain, the Bragg Creek area could be extremely popular as a year round recreational centre for the Calgary market.

An operating statement for a proposed 500 unit secondary homes development in the Bragg Creek area, to be developed in equal increments over a 10 year period, indicates an average annual revenue potential of approximately \$90,000 per year, with the maximum investment by the Band being in the order of \$200,000. The total accumulative income from this operation over a 20 year period is estimated at \$1.8 million dollars. This estimate is felt to be conservative, in that the total Calgary area market for secondary homes is far in excess of the 500 units used as a basis for estimates.

In order to promote and control orderly development on the Sarcee Reserve, it is recommended that a system of land use control be instituted. The Proposed Land Use Map forming part of this report designates land use areas in general terms. This plan should be reviewed by Sarcee Council and the Sarcee Development Board and should then be further refined and adopted by By-law. This land use plan will then provide a firm basis for decision making by Council in the future. It must be noted that adoption of such a bylaw does not prejudice land use for all time; as circumstances change the bylaw, and thereby the land use plan, can be amended as required.

Sarcee Band members have expressed a strong desire for a recreation complex which would provide complete recreational facilities for their young people. While such an undertaking is not possible at this time due to lack of funds, this project must be given high priority as funds become available from revenue-producing developments. Negotiations with the City of Calgary regarding joint use and funding of a recreation complex should be continued.

Finally, it is recommended that the Sarcee Band Council and Band members provide every possible assistance to the Sarcee Development Board, and that the Board take immediate action to incorporate under the provisions of the Alberta Societies Act.

APPENDIX I

SUMMARY OF RECOMMENDATIONS FROM THE BANFF WORKSHOP AS SUBMITTED BY THE SARCEE PARTICIPANTS

HOUSING

There were two main problems mentioned:

- (1) Empty Houses
- (2) Payments on houses not enough.

The group recommended that a new rule be brought in which would require a person to live in their house and if they didn't the house would go to someone else.

They felt that a new payment system should be started because the present payment of ten dollars per adult per month will not give the Band enough money to build more houses for the young people who will want them. A village to be set up in the future where enough rent will be collected for the village to pay for itself.

JEALOUSY & COMMUNICATIONS

In most cases jealousy is caused by a lack of communications. Some solutions for jealousy:

- (1) Visit neighbors.
- (2) Involve more people in decisions.
- (3) Start a place on the Reserve for informal gatherings.
- (4) Ignore jealousy.
- (5) Every house get the news letter.
- (6) Have adult education to study ways and means to get people to co-operate.
- (7) Start a family counseling service on the Reserve.
- (8) Suggested that many people are too casual about legal marriage, and many not married are receiving the benefits of a house. The group suggest that people approach marriage and family life seriously and that the trend should be changed.
- (9) Work on common projects.
- (10) Establish a central place for informal gatherings perhaps at the proposed arena.
- (11) Use Band funds to hire a local person to talk to Band members about recommendations of Banff Workshop.

ELECTIVE SYSTEM

The group felt a new elective system should be started because now good men who run for chief and lose are out as only one man is elected chief.

They suggest that 5 men be elected in the first vote and then a second election be held where the Band members vote on which one of the five already elected be chief.

The group felt that there should be a definite period for nominations and for campaigning. One suggestion was that a meeting be held in the hall where each person nominated would tell what he wanted to do.

It was suggested that Band councillors be sworn into office.

CULTURE

The group felt that Sarcee were losing their culture and language. Some recommendations were:

- (1) Write Sarcee history.
- (2) Record language on tape.
- (3) Parents teach children language.

AGRICULTURE

Cow Camp — Nearly all the people at Banff were concerned about the cow camp. Recommendations:

- (1) Set up proper set of books.
- (2) Change the watering set up.
- (3) Training of all men working at cow camp.
- (4) Man on duty at all times at calving.
- (5) Modernize management.
- (6) Raise salary of stockmen for more job satisfaction.

Herd Loans — Recommendations:

- (1) Set time loans have to be paid back.
- (2) Band members should get 10-50 head to start.
- (3) Pay back should be half heifers each year.
- (4) Band take cattle from people who don't pay back.

General Agriculture Recommendations

- (1) Start horse business, riding stables.
- (2) Band should give first priority to helping individual get started.
- (3) Any new haying equipment should be privately owned and Band should have one man in charge of their machinery.
- (4) Set up pound on Reserve.
- (5) Set up a feed lot to use grain and calves grown on the Reserve.

Land Recommendations

- (1) Band assist individual to start farming or ranching on enough land.
- (2) Each individual pay back a share to Band for land use.

- (3) There should be a long range plan for land use especially the military lease.
- (4) Stop cattle and horse leases to whites.
- (5) When whites lease expire start a hay selling business on land at west end.
- (6) Start a Land Use Committee for all land uses.
- (7) The west end should be for hay and cattle.
- (8) Any further land developed should be laid out on a section basis, e.g.: army lease, west end.

General Comments

- (1) Band members should not have to pay rent.
- (2) If Band member uses land he should not have to pay rent but if he leases it he should have to.
- (3) If a man is only using a little land he should not have to pay rent.
- (4) If we cleared and broke our own land we should not pay rent.

RECREATION

Recreation Center — All groups agreed an arena was needed and should be the project started on first.

Recommendations:

- (1) Build at east end because:
 - (a) natural gas,
 - (b) easier to rent to city,
 - (c) get 3 phase power.
- (2) Band contribute \$50-\$75,000.00:
 - (a) build at Bull Head Hall.
- (3) Promote use for girls as well as boys.
- (4) Make it Centennial project and Band contribute centennial funds at start.
- (5) Have whole recreation complex and arena in first part.
- (6) Start training manager and rink operator right now.
- (7) A place where people can meet informally should be included.
- (8) Eventually recreation center would include: arena, curling rink, swimming pool, gymnasium, auditorium, tennis court, golf course, club room for youth, informal meeting place.

The Chief and councillors all stated that if the Band members want an arena they will work to get it.

It was noted by some that an arena may lose money and other developments are going to have to be started to pay for it and keep it running as we don't want to drain Band funds.

The Calgary School Board and the City of Calgary may be willing to help put up some money for an arena in that area of the city.

Recommendation:

- (1) A recreation director should be hired before any other plans are started for an arena.

Bragg Creek

Recommendations:

- (1) Motel not feasible now.
- (2) Build cottages and then lease on yearly basis to whites.
- (3) Promote development at Bragg Creek with 10-20 year leases for cottages.
- (4) Set up a boys' camp with Tee Pee's for the boys and include horseback riding.
- (5) Move Indian days to Bragg Creek for a tourist attraction.
- (6) Don't want long term leases.
- (7) Rent platforms for tents north of Bragg Creek.
- (8) Skidoo area in winter.
- (9) Tee Pee Village.
- (10) Riding stables.

East End

- (1) Best place for tent and trailer park at Fish Creek.
- (2) A tent and trailer park will require management and training to start now.

EDUCATION

Education is a 100% Federal responsibility. This includes all costs and every Band member has a responsibility to see that this continues.

School Attendance

Recommendations:

- (1) Band set aside scholarships for all grades.
- (2) Make parents realize the importance of education by adult education.
- (3) Give the students more pride by teaching Indian culture.
- (4) Give more assistance from junior high school on.
- (5) A school on the reserve and if possible whites coming to it. If an academic school is not possible a good vocational school would work.
- (6) Sarcee have more say in teachers and what is taught.
- (7) Teachers to assist students in the evenings.
- (8) Parents to stop taking students out of school to babysit young children.
- (9) Parents go to school activities to show children they think school important.
- (10) Parents accept more responsibility for education than putting students on the bus in the morning.

- (11) Teachers should be brought out to the Reserve to learn about it.
- (12) Change the school so it means more to the Sarcee students.
- (13) All parents give their support to the study center and library.

Discrimination

Recommendations:

- (1) Screen teachers to take out those that discriminate.
- (2) Parents teach their children to stop discriminating against other Band children.
- (3) Pretend you don't see discrimination and the person will give up.
- (4) Students invite white students on the Reserve for trail rides and other activities.

Culture

Recommendations:

- (1) Canadian textbooks with the facts about Canadian Indians should be used in school.
- (2) Start a school on the Reserve.
- (3) Parents should teach Sarcee language.
- (4) The study center and library should have a good supply of books on Indian culture.
- (5) Teach Sarcee in school.

General Recommendations

- (1) Provide child with summer work experience.
- (2) Take students on field trips so they can see how other people earn their living.
- (3) Study ways to work together.
- (4) If parents don't like to go to school alone teacher aides go with them.
- (5) Start more adult education classes.
- (6) Stress adult education, training on the job and upgrading.
- (7) School system deal with complaints promptly.

One comment was, drop outs don't accept the learning process, they are going against the learning process.

INDUSTRY

Band is losing funds and the population is increasing. Some ways are going to have to be found to keep up Band revenue per person.

Industrial Park

Recommendations:

- (1) 60 acres on the north side in present army lease.
- (2) No industry that pollutes, electronics, trailers, sash and door, Alberta panelling.
- (3) The park would be mainly for employment and not for Band revenue.

Housing Development

Recommendation:

- (1) Don't want a housing project at the present time, because it would involve long term leases but it may be needed in the future.

Mobile Home Park

Recommendations:

- (1) Plan for 1,000 units but start with 200 units.
- (2) A small shopping center with Band members running the stores might be good.

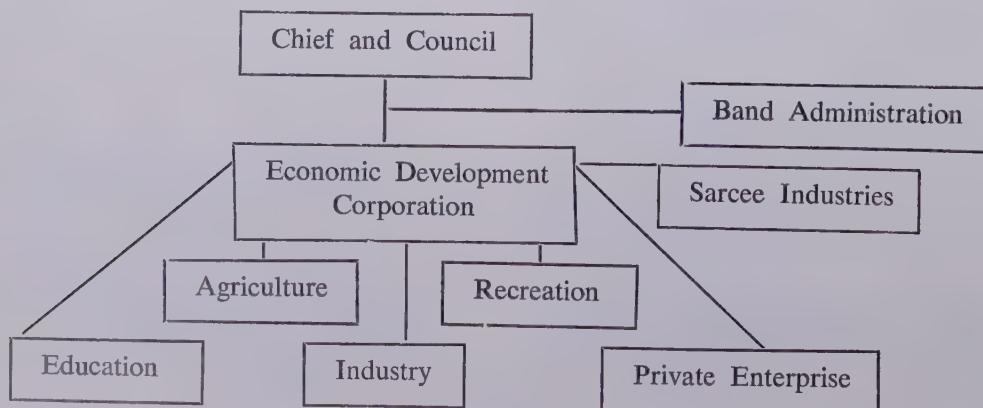
Golf Course

- (1) The group felt a golf course would be all right if they were sure it would make money.

General Comments:

- (1) Band members should get help to start on their own.
- (2) Must have industry for employment.
- (3) We must offer something to industry to get them out here.

POSSIBLE ORGANIZATION



Recommendations:

- (1) Moved that we start an Economic Development Corporation. All in favor but 3. These 3 abstained.
- (2) The purposes of this Corporation are to support all forms of development on the Reserve. One reason for this Corporation is to separate Business and Politics. A second function is to co-ordinate all development activities. The chief and council would set the development policies and the Corporation would carry them out and report back to Council.
- (3) To help get the Corporation started and financed it was suggested that the Consultants assist. 24 in favor and 3 opposed.
- (4) It was agreed that a meeting of all Band members be held May 3 at 3 p.m. Between now and then 5 people, Victor Starlight, Sidney Starlight, Reg Onespot, Bruce Starlight and Harley Crowchild, go to every house and inform the people about the recommendations from Banff. The Consultant agreed to pay them for 1 week.
- (5) It was agreed that every person at Banff had a responsibility to inform people about the workshop and its recommendations and come to the meeting on May 3.
- (6) It was agreed that a news release should be sent out later and that there be no reporters at the meeting on May 3.
- (7) The statement that no Councillors should be on any Development Corporation group was agreed on.
- (8) It was recommended that the Economic Development Corporation be financed by H.R.D.A. and/or Indian Affairs.

(9) Sources of Money:

1. Indian Affairs.
2. Farm Credit Corporation.
3. Banks.
4. Industrial Development.
5. Band Funds.
6. Regional Economic Expansion.
7. H.R.D.A.
8. City of Calgary.
9. Farm Loan Board.
10. Alberta Credit Corporation.
11. Credit Unions.
12. Pawn Shop.
13. Walkathon.
14. Service Clubs.
15. Secretary of State Cultural Grants.
16. Central Mortgage & Housing.
17. Feeder Association.
18. Band Funds.
19. Band members.
20. Recreation, Department of Youth.
21. P.F.R.A.
22. Canada Manpower.
23. Department of Education.
24. Co-op Activities Branch.
25. Donnar Foundation.
26. Ford Foundation.
27. Rockefeller Foundation.
28. Carnegie Foundation.
29. Glenbow Foundation.
30. National Museum of Canada.
31. Canada Council.
32. Grants for Centennial.
33. Private Businesses.
34. Trust Companies.
35. Native Development Fund. I.A.A.

APPENDIX II

CURRENT LABOR FORCE AND SKILLS

NAME	AGE	SKILLS	EMPL.
Frank Onespot	66	Carpenter	None
Jim Simeon	63	Labourer	Council member
Harold Crowchild	56	Rancher	
Isaac Crowchild	59	Labourer	Nil
Lawrence Whitney	59	Welder	Part-time
Sam Simon	57	Labourer	Nil
Dave Jacobs	56	Logger	Part-time
Tom Big Plume	48	Rancher	
Philip Meguinis	52	Labourer	Part-time
Henry Dodginghorse	51	Band Stockman	Full-time
Edwin Crane	47	Grader Operator	Full-time
Pete Manywounds	45	Welder	Nil
Robert Onespot	44	Labourer	Nil
Leonard Crane	44	Labourer	Nil
Russel Big Crow	42	Labourer	Part-time
Douglas Crow Chief	43	Labourer	Nil
Art Onespot	44	Rancher	
John Big Plume	41	Caretaker	Full-time
Roy Whitney	49	Councillors' Aid	Full-time
Bill Whitney	47	Farmer	Part-time
Amos Manywounds	41	Farmer	Part-time
Alfred Otter	43	Labourer	Part-time
Mike Meguinis	42	Tractor Operator	Nil
Robert Dodginghorse	43	Councillor	Full-time
Joe Big Plume	43	Labourer	Part-time
Roy Otter	40	Labourer	Part-time
Gordon Crowchild	40	Councillor	
Richard Dodginghorse	39	Bus Operator	Full-time
Albert Waters	39	Labourer	Part-time
Francis Manywounds	40	Disabled	
Frank Big Crow	38	Labourer	Part-time
Walter Meguinis	38	Labourer	Part-time
Harry Dodginghorse	37	Labourer	Part-time
Norman Onespot	35	Artist	Nil
Clifford Big Plume	34	Rec. Director	Part-time
Harley Crowchild	33	Auto Body Mechanic	Part-time
Fred Eagle Tail	37	Bus Driver	Part-time
Rodney Big Crow	32	Labourer	Part-time
Reg Onespot	32	Development	Full-time
Tom Runner	32	Carpenter	Full-time
Victor Starlight	31	Carpenter	Part-time
Sam Manywounds	31	Labourer	Part-time
Alex Crowchild	31	Labourer	Part-time
Floyd Runner	30	Labourer	Part-time
Ronald Dodginghorse	30	Labourer	Part-time
Larry Whitney	30	Muffler Mechanic	Part-time
Lawrence Jacobs	29	Labourer	Part-time
Sammy Simon	28	Labourer	Part-time

NAME	AGE	SKILLS	EMPL.
Rupert Crowchild	30	Rancher	
Calvin Crowchild	28	Rancher	
Tom Onespot	28	Labourer	Part-time
Arnold Crowchild	28	Development	Full-time
Benny Big Plume	27	Labourer	Part-time
Sidney Starlight	26	Rancher	
Joe Simeon	25	Constable	Full-time
Steven Runner	25	Constable	Full-time
Charles Crowchild	25	Labourer	Part-time
George Onespot	25	Rancher	
Victor Onespot	25	Labourer	Part-time
Carl Big Plume	25	Labourer	Part-time
Lee Whitney	22	Welder	Part-time
Jack Jacobs	23	Labourer	Part-time
Ernest Starlight	23	Labourer	Part-time
Bruce Starlight	23	Rancher	
Howard Simeon	22	Labourer	Part-time
Erwin Simon	22	Labourer	Part-time
Frank Little Light	21	Labourer	Part-time
John Onespot	21	Welder	Part-time
Hector Big Crow	23	Labourer	Part-time
Maurice Big Plume	41	Rancher	
Clarence Big Crow	40	Rancher	

NAME	AGE	SKILLS	EMPL.
Mary Onespot	56	Handcrafts	Part-time
Hilda Big Crow	61	Handcrafts	Part-time
Clara Big Plume	70	Housewife	
Debrah Big Plume	31		
Floreen Big Plume	35	Housewife	
Joan Big Plume	29	Housewife	
Marjorie Big Plume	44	Housewife	
Victoria Big Plume	17	Student	
Irene Crowchild	28	Housewife	
Marie Crowchild	23	Secretary	Full-time
Mabel Dodginghorse	70	Housewife	
Elsie Jacobs	49	Housewife	
Dora Big Plume	45	Housewife	
Annie Manywounds	66	Handcrafts	Part-time
Rosalyn Manywounds	20	Housewife	
Bessie Meguinis	84	Retired	
Sarah Meguinis	46	Housewife	
Victoria Onespot	79	Retired	
Daisy Otter	80	Retired	
Audrey Pipestem	23	Housewife	
Violet Runner	28	Housewife	
Ruth Starlight	35	Housewife	
Mary Starlight	37	Housewife	
Nancy Big Crow	21	Housewife	
May Big Crow	41	Housewife	Full-time
Sally Big Plume	22	Drafting	Full-time
Venora Big Plume	28	Teacher's Aide	Full-time
Lucy Big Plume	60	Social Worker	Full-time

NAME	AGE	SKILLS	EMPL.
Rachel Big Plume	43	Caretaker	Full-time
Louise Big Plume	56	Handcrafts	Part-time
Evelyne Big Plume	42	Nurses' Aide	Full-time
Isabel Simeon	62	Housewife	
Lillian Simeon	24	Housewife	
Rose Crane	40	Housewife	Gardening
Helen Crowchild	25	Housewife	
Regena Crowchild	26	Band Manager	Full-time
Daisy Crowchild	70	Handcrafts	Part-time
Mrs. Marie Crowchild	32	Nurses' Aide	
Violet Crowchild	52	Teacher's Aide	Full-time
Mildred Crowchild	28	Housewife	
Edith Crowchild	48	Housewife	
Colleen Crowchild	25	Nurses' Aide	
Bernadette Crowchild	25	Nurses' Aide	
Jean Dodginghorse	37	Nurses' Aide	
Sarah Dodginghorse	44	Housewife	
Katie Dodginghorse	58	Housewife	
Angeline Dodginghorse	37	Nurses' Aide	
Carol Dodginghorse	25	Teacher's Aide	Full-time
Eliza Eagletail	32	Nurses' Aide	
Marjorie Onespot	30	Nurses' Aide	
Marguerite Jacobs	41	Housewife	
Judi Jacobs	26	Bookkeeper	Full-time
Cecilia Jacobs	30	Housewife	
Juliet Littlebear	60	Housewife	
Mary Rose Manywounds	44	Housewife	
Loretta Manywounds	26	Housewife	
Murial Manywounds	41	Teacher	Full-time
Helen Meguinis	46	Housewife	
Amelia Meguinis	36	Housewife	
Josephine Meguinis	29	Housewife	
Lottie Onespot	40	Housewife	
Beatrice Onespot	22	Housewife	
Lorna Onespot	23	Housewife	
May Onespot	55	Office Worker	
Margaret Whitney	27	Housewife	
Patricia Onespot	30	Housewife	
Ida Onespot	38	Housewife	
Monica Whitney	41	Housewife	
Barbara Otter	33	Bus Driver	Part-time
Rosella Runner	29	Housewife	
Rose Runner	55	Teacher's Aide	Full-time
Gloria Runner	26	Housewife	
Beverly Runner	29	Welfare Worker	Full-time
Mary Simon	46	Teacher's Aide	Full-time
Arlene Simon	24	Housewife	
Deanna Starlight	22	Housewife	
Louise Starlight	61	Retired	
Shirley Starlight	27	Housewife	
Eleanor Starlight	30	Housewife	
Patsy Whitney	31	Housewife	

APPENDIX III — AGRICULTURE

- A Husbandry of Alfalfa
- B Husbandry of Grain and Oil Seed
- C Breeding and Husbandry of Horses
- D Husbandry of Fish Farming
- E Report on the Cow Camp — Sarcee Band Herd

APPENDIX III A

HUSBANDRY OF ALFALFA

1. The Land and Climate

Alfalfa can be grown successfully in areas of 18 inches of rainfall or more. Heavier rainfall results in more hay. Alfalfa does well on loam and sandy loam soils. It does not do as well in heavy clay soil or in water-logged or salty soils. It will withstand some flooding, but not for long periods. Alfalfa roots will draw from depths of up to 20 feet. A high water table, topped by a well drained soil is ideal for alfalfa if irrigation is not available. Most of the area on the Sarcee Reserve would permit only one cut per year or at the most two cuts.

Alsike clover will withstand flooding in heavy soils. It will yield less and is much harder to cure for hay. Some of the poorer drained hay flats on the Sarcee may grow Alsike very well.

2. Land Preparation and Seeding

Alfalfa is not a good competitor with a creeping rooted grass, like brome. Therefore it is necessary to get a good grass kill before sowing, if a pure stand of alfalfa is desired. This means a very thorough summer-fallow for a year before seeding.

Alfalfa can be sown any time before July 15th, with or without a nurse crop. A nurse crop is a crop sown at low seeding rates ($\frac{1}{4}$ to $\frac{1}{2}$ bushel per acre) with a hay crop, and is used to protect the hay seedlings from weed competition before it becomes established. It is preferable to sow the hay crop without a nurse crop, unless the nurse crop can be harvested early as feed. Seeding rates recommended for alfalfa are 5 to 10 pounds per acre, sowed at a depth of $\frac{1}{2}$ to 1 inch into weed free, well packed, moist soil. Satisfactory stands have been obtained by broadcasting the seed on the top of the ground and harrowing it in. This is risky in that it depends on rain

soon after sowing. If a mixture is seeded the brome or other grass should be sown in rows and the alfalfa in alternate rows. These rows should be 6 or 7 inches apart. Brome can be sowed to a depth of $1\frac{1}{2}$ inches. The alfalfa should be treated with a nitrogen-fixing bacteria inoculate, before seeding. Alfalfa can be sprayed for broadleaf weed control with MCPA at a rate of 2 to 3 ounces per acre. There will be some damage to the alfalfa.

3. Fertilizing

Alfalfa that has been inoculated with a nitrogen-fixing bacteria will not require a nitrogen fertilizer for two years. It does require a phosphate fertilizer, sulfur, and sometimes potash. A soil test is necessary to determine potash and phosphorous levels in the soil. The fertilizer program recommended is as follows:

1st year:	100 lbs. 16-20-0 unless potash is needed
2nd year:	200 lbs. 16-20-0 unless potash is needed
3rd year	100 lbs. 11-48-0 unless potash is needed
and after:	300 lbs. 34-0-0 containing a mixture of ammonium sulfate and urea.

4. Harvest

Quality in hay is related to the protein content. Green color and smell are also important. The protein content is directly related to the time of cutting and the leaf loss when baling. Total pounds of protein per acre is the highest when the hay is cut at $1/10$ to $1/2$ bloom in alfalfa and just before heading in grass. Leaf loss occurs when the hay is baled when it is too dry. In this condition, when the hay is touched by the baler pick-up, the leaves fall off. Color and odor are affected when the hay is rained on, or when it lies in the hot sun too long. Therefore, equipment and men must be available to harvest the crop at the right stage with as little loss of time as possible.

APPENDIX III B

HUSBANDRY OF GRAIN AND OIL SEED

1. The Land and Climate

Wheat requires 100 to 110 frost free days. Therefore wheat growing on the Sarcee Reserve is hazardous because of the short growing season. Further the changing methods of purchase by the Canadian Wheat Board are putting more emphasis on the protein content of the wheat. Areas to the east of the Sarcee Reserve have climatic advantages for growing high protein wheats. Wheat growing for the milling trade is not recommended for the Sarcee area. Wheat may have some advantage for feed in the area because of its superior feed value.

Barley requires 90 to 100 frost free days. Therefore some of the western land on the Sarcee Reserve is too frosty for barley production. Barley is damaged by frost more than wheat. Frosted barley is completely unacceptable for the malting trade, and is severely discounted in the feed trade. Some of the early varieties such as Olli and Gateway can be grown in the western areas, but these yield less. Both Olli and Gateway are acceptable to the malting trade, but Olli is preferred.

Rapeseed (Polish varieties) require about the same growing season as Olli barley. It could be grown successfully in most years on most of the Reserve.

Oats are usually not an economical crop to grow.

2. Land Preparation and Seeding

Cereals (wheat and barley) can be sown on summer-fallow or stubble. The land should be cultivated deep enough to provide a good seed bed (4-6 inches), and a good weed kill. Summer-fallow may be required for control of perennial weeds such as quack grass or thistle. However a good fertilizer program and good seed bed preparation with a spray program have been enough for control in some areas. Cereals should be sown into moisture at a depth of 1 to 1½ inches. If necessary to reach moisture, it may be necessary to sow deeper. It is better to sow deeper than to not reach moisture. However, depths of over two inches will decrease yields.

Rape should be sown into a weed free seed bed at a depth of ½ to 1 inch. Stinkweed, lambs quarter and

pigweed are serious competitors to rape. These weeds will usually grow in mid-May and it is preferable in dirty land to get a kill of these weeds before planting, since rape cannot be sprayed with a weed killer. Spraying of cereals with weed killers is recommended, depending on the weed infestation. Rape can be sprayed with wild oat sprays, such as Carbyne or Avadex.

3. Fertilizing

Proper fertilizing applications will increase yields, quality, and improve weed control. It will usually speed maturity and therefore guard against frost. Soil tests are of value in determining the application rates of fertilizer, but the most reliable guide is the experience built up over the years in observing crop yields under different conditions. Cereals and rape should have at least 60 pounds of actual nitrogen available to it. Most stubble land has very little available nitrogen. The recommendation is 75 to 90 pounds of anhydrous ammonia for stubble, and 20 pounds of anhydrous on summer-fallow. The nitrogen phosphorous balance is important both in yield and time of maturity. An application of 60 to 70 pounds of 11-48-0 with the seed should be adequate.

4. Harvest

Cereals and rape are swathed rather than straight combined in most of Alberta. This practice can speed harvesting by five to 10 days. Cereals should be swathed when the moisture level of the grain is 25-40 percent. Cereals at this time usually have turned color, and are in the hard dough stage. Rape should be swathed when the seed is turning color. Combining is done after the grain is dry. This is below 11 percent moisture for rape, 14.8 percent moisture for barley and 14 percent for wheat. Combine settings are important in order to have a quality product for sale.

5. Storage

Dry storage is important particularly for rape as this crop is particularly subject to heating. Damp grain or damp spots leaves the grain subject to heating and insect infestation. This will lower the quality of the grain, and therefore the price.

APPENDIX III C

BREEDING AND HUSBANDRY OF HORSES

1. Breeding

Breeding is the key to any horse operation. In order to produce an easily marketable animal, parentage is important. Pure-bred papers are essential in a Quarter Horse operation for easy sale and a resultant higher price.

(a) **Gestation length** — Gestation is the time or period from breeding to birth of the foal; a period of 340 to 360 days. The gestation period is subject to considerable variation. Two factors affect this time period:

1. **season of breeding** — Fall breeding results in a two week shorter gestation period than spring breeding.
2. **level of nutrition of mare** — well-fed mares have shorter gestations than those on a maintenance ration.

(b) **Age to Breed** — Size rather than age may be a practical indication of proper time for first breeding. Small, early maturing breeds such as the Quarter Horse can be bred as two year olds.

If a mare is bred when too small or immature, her own body needs for maintenance and growth plus the necessary milk for her foal are beyond her capacity. Even with liberal feeding the young lactating mare cannot assimilate enough food to meet her requirements. Accordingly, she becomes thin and her foal fails to make normal growth. The foal may be permanently stunted and the mare fails to come into heat or fails to conceive. Thus a stunted foal and a barren mare result.

(c) **Heat Period** — Improving the nutritional level of mares in poor condition immediately prior to and during the breeding season improves the regularity of the heat cycle and increases the chances for conception.

To insure fertile mating requires knowledge of the duration of heat (5-7 days) and time of ovulation in the mare so that she may be bred about two days before the end of heat. Experience has proven this to be the optimum time to breed when only one service is given.

In any event it takes experience to detect heat in hand breeding. This comes with time in a horse operation.

(d) **Diagnosis of Pregnancy** — Because of the low conception rate (65-70 percent) in mares, compared to other farm animals; their value per head; and their long gestation period; early pregnancy diagnosis is important. Failure of the mare to come into heat on schedule (15 to 16 days) following the date of last service is indicative of pregnancy.

With proper management and diagnosis of pregnancy a 90 percent colt crop born can be expected and a 95 percent colt crop can be weaned.

(e) **Breeding Capacity in Males** — The following guidelines should be followed in the use of stallions for breeding.

Large well-developed two year olds — 10 to 12 mares during a 6 to 8 week season.

Four year old or older — 50 to 60 mares in a 90 day season with good management.

(f) **Management at Breeding Time** — There are three systems of breeding horses:

1. **pasture breeding** — easiest but less controllable
2. **hand breeding** — most extensively used
3. **artificial insemination** — only to a limited degree because expected semen life is from 24 to 48 hours.

Mares should be bred on the ninth day after foaling. For protection of the stallion and for ease in handling, mares should be hobbled and the tail wrapped for breeding. It is also advisable to wash the external genitalia of the mare with a mild soapy water. Following mating the mare should be isolated and kept as quiet as possible for a minimum of 12 hours.

Only mature stallions (4 years old and over) should be permitted to run with a band of mares and, 20 mares is about the maximum if the breeding season is restricted to 60-90 days. If hand mated, the stallion should have an individual stall or shed with an adjoining exercise paddock. Exercise and greenfeed or good quality hay plus enough grain to maintain weight are essential. Overfeeding and confinement without exercise should be avoided. Stallions should be trained to mount and dismount properly. If a stallion is being stood for public service, only clean, healthy mares should be accepted. It is advisable to thoroughly wash his penis with a mild soap solution after each service to reduce danger of carrying infection from one mare to the next.

(g) **Care of Mare before Foaling** — As with all pregnant animals, the mare should be maintained in normal flesh and permitted or forced to get regular and moderate exercise. Confinement and overfeeding should never be permitted. Pasture that provides greenfeed, exercise, and sunshine is an excellent environment. If it is necessary to confine the mare, she should be exercised daily until she foals. If pasture is not available or if it is sparse, the mare should be allowed all the hay, preferably good quality grass,

or mixed hay plus oats if necessary, to maintain her in strong flesh, but without fat.

(h) **Care of Mare at Foaling Time** — The weather will determine the protection the mare needs at foaling time. Clean pasture is a good place for the mare to foal, although this may make it difficult to observe her regularly or to give assistance when needed. If confined, she should be in a clean box stall at least 12 feet by 12 feet, bedded with clean straw or shavings. If the temperature is low it is advisable to close the stall, to prevent drafts and chilling. Except in severe weather a dry windbreak is all the protection needed.

Because of the great variation in length of gestation of mares it is difficult to predict foaling date. Frequent observation is essential. As long as she is making progress during labor, she should not be disturbed.

(i) **Care of Newborn Foal** — Iodine should be applied to the navel cord. If the foal is normal, it will be on its feet within one-half to one hour after birth. If the weather is severe, it is well to dry the foal. The mare should be checked for milk and the foal should be observed closely for normal bowel movements and urination. Failure of either within 12 hours after birth is cause for veterinarian treatment.

2. HUSBANDRY

(a) Feed Requirements

Horses vary so widely in temperament, in their response to the environment to which they are subjected and to work or the lack of it, that the use of specific nutritive requirements is much less practical for horses than for other farm animals. Thus, the proper feeding of horses is and will continue to be a mixture of art with a general understanding of the principals of nutrition, applied to each individual horse according to his need.

In horses at work, the energy requirement increases as the work increases, all other requirements remaining essentially at the maintenance level. During late pregnancy there is marked increase in the protein, calcium, phosphorous, and carotene requirements. The energy requirement is only slightly higher than for maintenance of the nonpregnant mare. The energy and protein demands of peak lactation are more than double those of late pregnancy, illustrating the importance of adequate nutrition for the mare and her growing foal.

Good, mixed grass-legume pasture or hay will provide all the nutrients for maintenance or even light work for mature horses. Additional energy can be supplied from oats or barley, in that order of preference, as the work load increases. Young growing

horses, or mares in late pregnancy or in lactation may need additional protein supplement, such as linseed, soybean, or cottonseed meal unless the roughage portion of the ration is made up of a liberal amount of high quality legume hay. Green, leafy alfalfa or clover hay, fed with an equal quantity of good grass hay, such as timothy or prairie, makes an ideal roughage for young growing animals.

Horses are more susceptible to digestive disturbances than other farm animals. Because of this, greater care must be exercised in election of feeds free of mold and dust. Regularity of feeding is important, and changes in kind or amount of feed should be gradual. The following in pounds of feed per 100 pounds of live weight will serve as an average guide for mature horses.

Maintenance: 1½ to 2 pounds of grass or grass-legume hay.

Light Work: ⅓ to ½ pound grain plus 1 to 1½ pounds hay.

Medium Work: ¾ to 1 pound grain plus 1 to 1¼ pounds hay.

Hard Work: 1 to 1¼ pounds grain plus 1 to 1¼ pounds hay.

Iodized block salt, and mineral mixture of two parts steamed bone meal to one part salt should be available to the horse in his stall, paddock or pasture.

(b) Maintaining Health and Soundness

Because his usefulness is so dependent on his ability to perform the tasks called for, soundness and health are of first importance. Normal eyesight, sound feet and legs, and good lungs are a must in a top horse. Similarly, freedom from parasites and disease are essential to a healthy, good-working horse.

Symptoms of parasitism develop gradually and may go unnoticed or be confused with other conditions, until they become pronounced. Young animals are most susceptible, if they are infested, they appear unthrifty, have rough hair coats, are thin in flesh, and may be stunted in growth. For these reasons it is advisable to deworm colts in the fall of the year before damage becomes irreversible. Clean stalls, and pastures free of fresh droppings or manure from stalls will prevent heavy infestations of worms.

Bot flies can also become a problem. The eggs are laid in the coat of the horse and if not removed before hatching can infest the digestive system causing extreme damage. Clipping the hairs, or rubbing the eggs off by means of a hot wet rag will prevent the bots getting into the stomach of the horse. Complete wetting with high pressure spray, using lindane or benzene hexachloride, is an effective method for ridding the horse of both mites and lice.

Distemper is a widespread, highly communicable disease. It is spread through contact at feed bunks or water troughs, or by inhalation. Loss of appetite, high fever, and a yellowish pus-like nasal discharge are common symptoms. Isolation in clean, comfortable quarters and good nursing are important. Prevention by immunization is partially effective, and is recommended before exposure to other horses.

Encephalomyelitis (sleeping sickness) can also be a problem in horses. It is most prevalent in late summer or early fall. Vaccination is the only safe preventive, and horses should be routinely vaccinated each year in the spring or early summer.

(c) Care and Training

(i) **Housing** — Except for newborn foals or extremely old or sick horses, shade and a dry windbreak are all the protection needed from the elements. Too much protection in the form of warm and poorly ventilated, or drafty stalls is worse than not enough. If a horse is adequately fed he can tolerate almost any kind of weather.

Clean stalls and paddocks free from loose wire, nails, glass, or other sharp objects are much more important than the kind of stall or barn. Most injuries to horses can be prevented. Box stalls should measure not less than 12 by 12 feet, with solid walls at least 4 feet high and ceiling 10 feet high or more. Cracks in flooring where a foot can get hung should be repaired. Board fences around corrals are much safer than wire. Machinery should never be left where horses exercise.

(ii) **Exercise** — All horses need exercise and will get enough when left out on pasture. If confined to a stall, they should be turned out for exercise or ridden daily. Horses left in stalls without exercise frequently get stiff, their lower legs swell, and they go stale. Next to feed and water, exercise is the most important requirement for a horse.

(iii) **Grooming** — Regular and thorough brushing not only keeps the horse clean, but keeps his coat glossy and his skin healthy. It is especially important to rub him down and cool him out after a hard and hot workout. He should be wiped dry, rubbed vigorously, blanketed (in cool weather), and walked for 20 to 30 minutes while he cools.

(iv) **Feet Trimming** — The frequency of trimming varies with the kind of terrain and whether the horse is kept confined or is on pasture. If the horse is on sandy or gravelly pasture the

feet wear enough that little trimming is necessary. If the horse is on wet, soft ground or in confinement, the feet should be checked every six weeks and at this time cleaned to prevent disease.

Horses used regularly need shoes. Shoes need to be reset every six weeks. Keeping a horse properly shod is expensive, but it is a necessity if he is to travel over rough or gravel roads.

(v) **Training and Handling Colts** — A foal should be haltered at a week to ten days and handled regularly to gentle him early. It only takes about an hour to halter break a young foal. When he is two months old, his feet should be trimmed and at regular intervals of four to six weeks thereafter.

Foals should be weaned at four to six months, and this requires good management. Take the mare from the foal quietly, and take her far enough so that the foal cannot hear its mother. The foal should be left in a clean, tight, and safe stall, fed lightly, kept quiet, and watered by hand. Turn the weanling out to exercise in a tightly fenced paddock as soon as it can be done with safety. As soon as the weanling is eating well, worm him. Start handling him in the stall as soon as he settles down, by brushing, foot inspection, tying up, and teaching him to respond to halter. Accustom him to discipline and to all routine handling until he no longer shows signs of fear. Allow the weanling all the good mixed legume hay he will eat and gradually increase the oats to five or six quarts daily. This routine should be followed until spring, when the weanling is ready to turn to pasture or continue his training.

Unless they are to be used for breeding, colts should be gelded in the spring when they are yearlings.

It is best to make the training from foal to two-year-old a continuous unbroken process, through saddle and rider. The rider should be light in weight (not exceeding 120 pounds) and ride just enough to acquaint the yearling with the saddle and rider. As the yearling approaches two years of age, he can carry a heavier load, stand more work, and graduate into a "man-sized" horse with limited work.

Few persons have the patience and "horse sense" to train a horse properly. Horses are like humans; they require time, kindness, firmness, and understanding.

APPENDIX III D

HUSBANDRY OF FISH FARMING

Rainbow trout feed on a tiny shrimp-like creature. These shrimp do well on flooded top soil. Stocking rates are up to 200 fingerlings per acre. Fingerlings (4 inch in length) are big enough to be fished the first year. Fry (1-1½ inches) should have an opportunity to overwinter before they become big enough to be fished or fall harvested.

Fish, in depths of water under 16 feet, will winter-kill. Winterkill, or a complete harvest by draining is desirable because adult fish which have overwintered will attack the fry and fingerlings, when the pond is re-stocked in the spring.

The heat tolerance for Rainbow trout is 76°F. A shallow pond will rise in temperature levels which will affect the flesh of the fish. It may even rise to fatal temperatures. A deep pond (over 12 feet), does not have this problem. Even a shallow pond, if it does not get above the heat tolerance level of 76°F is satisfactory, as the cool water in the fall will firm up the flesh of the fish.

A fall (October, November) harvest of the fish is advisable. However, there is a risk that a small run-off will result in not enough water for fish, and that would put the operator out of business for one year.

APPENDIX III E

REPORT ON THE COW CAMP — Sarcee Band Herd

On February 9, 1970, the Cow Camp on the Sarcee Reserve was visited and the following observations made.

A. Cow Herd

There are about 160 cows and three-year-old heifers (1st calf) in the pregnant herd. These cows are being fed all the feed they want. The ration is about half prairie hay and half frozen barley greenfeed. The herd was not fed until New Year's, but had access to good crop aftermath. The cow herd appeared lightly fleshed but not weak. There was evidence of some lice in the

herd. The cows are rough coated in appearance. The ration is short of protein, phosphorous, Vitamin A, and short on total digestible nutrients. The calcium-phosphorous ratio is 4.5 to 1. A maximum CA-P ratio is 2:1. The cows have continual access to water, although trough area is limited.

Recommendation: These cows should be put on the following proposed ration immediately. Note that the following proposed rations were made up to best utilize the feeds that were on hand. These rations should be recalculated every year, based on analysis of the feeds on hand.

	Daily Feed (lbs.)	Total Protein (lbs.)	T.D.N. ¹ (lbs.)	Ca. ² (lbs.)	P. ³ (lbs.)	VA ⁴ (I.U.) ⁵
Requirements						
800 lb. Pregnant Cow	22	1.7	11.0	.035	.033	22,000
Present Feed						
Prairie hay	10	.64	4.4	.047	.007	15,000
Barley Greenfeed	10	.60	4.5	.030	.009	—
TOTAL	20	1.24	8.9	.077	.016	15,000
Shortage	2	.46	2.1	OK	.017	7,000
Proposed Ration						
Prairie hay	9	.58	3.96	.042	.006	13,500
Barley Greenfeed	9	.54	4.05	.027	.008	
Barley	2	.23	1.60	.002	.008	
Oats	2	.23	1.30	.002	.007	
Supplement	0.1	.03	.07	.003	.001	4,000
	22.1	1.61	10.98	.076	.030	17,500

There is located at the Cow Camp a mixture of 50 percent barley, 50 percent oats to which 100 pounds of molasses and 100 pounds of 32 percent protein supplement has been added per ton of grain. The supplement is .8 percent Phosphorous, 3 percent Calcium and has 40,000 International Units of Vitamin A per pound. None of this has been fed. This supplement is not what is required for this herd.

The supplement should have a lower calcium-phosphorous ratio and it should have Vitamin A added, at the rate of at least 60,000 International Units per pound.

Recommendation: When more of this grain supplement mixture is made up, the suggested changes should be made, and the molasses left out.

B. Yearling Heifers

The yearling heifers, i.e., rising 2 years, number about 56, appear in much the same condition as the cows, and are getting the same ration. These heifers also have continual access to water, but limited trough space. The ration requirements of these heifers and proposed ratios follow.

	Daily Feed (lbs.)	Total Protein (lbs.)	T.D.N. ¹ (lbs.)	Ca. ² (lbs.)	P. ³ (lbs.)	VA ⁴ (I.U.) ⁵
Requirements						
600 lb. Heifers	14.3	1.2	7.2	.024	.024	10,700
Present Feed						
Prairie hay	8	.512	3.52	.0376	.0056	10,500
Greenfeed	7	.420	3.15	.0210	.0063	
TOTAL	15	.932	6.67	.0586	.0119	10,500
						(4.9:1 ratio)
Shortage	OK	.268	.53	OK	.012	200
Proposed Ration						
Prairie hay (6.4%)	6	.38	2.6	.014	.014	9,000
Greenfeed (6.0%)	6	.36	2.7	.028	.004	
Barley	2	.23	1.6	.002	.008	
Oats	2	.23	1.3	.002	.007	
Supplement	0.1	.03	0.1	.003	.001	4,000
	16.1	1.23	8.3	.049	.034	13,000
						(1.5:1 ratio)

The proposed ration is recommended for the heifers and their present ration should be changed immediately.

C. Calf Herd

The calf herd is comprised of about 45 heifers which are being held back for breeding as two-year-olds. Their ration is a full feed of Prairie hay. These calves do not have access to water and are driven out once a day for

water, to a tank which is somewhat limited for space. This is not a satisfactory ration nor a satisfactory method of watering. Some of the calves are lousy. Some grain fed to these calves would be well used, and they should have one pound per day of a 32 percent supplement, with some phosphorous added.

Recommendation: This ration should be changed immediately.

	Daily Feed (lbs.)	Total Protein (lbs.)	T.D.N. ¹ (lbs.)	Ca. ² (lbs.)	P. ³ (lbs.)	VA ⁴ (I.U.) ⁵
Requirements						
400 lb. Heifer calves	12	1.4	6.4	.035	.024	9,000
Present Feed						
Prairie hay (6.4%)	12	.78	5.3	.056	.008	18,000
						(7:1 ratio)
Shortage	OK	.62	1.1	OK	.016	OK
Proposed Ration						
Prairie hay	8	.51	3.5	.037	.006	12,000
Barley	2	.23	1.6	.002	.008	
Oats	2	.23	1.3	.002	.007	
Supplement (32%)	1.0	.32	0.7	.030	.008	40,000
	13.0	1.29	7.1	.071	.029	52,000

The calves are presently being fed on the ground, and excess hay is used as bedding. This is wasteful of hay and tends to make disease control difficult. Such diseases

as coccidiosis are spread by ground feeding. If calves are to be fed hay, then a hay feeder should be built. Troughs should be supplied for grain at the rate of 18 inches of

feed bunk per calf for limited feeding. In the case of hay 6 inches per calf is adequate if the feeder is kept full of hay.

Recommendation: A hay feeder should be built for these calves, and troughs constructed for their grain.

D. The Bull Herd

The bull herd of nine was in a lightly fleshed condition and several bulls were visibly lousy. One bull was suffering from foot rot. The bulls were fed the same ration as the cows and heifers on the ground. There had been a problem in the past with internal parasites

	Daily Feed (lbs.)	Total Protein (lbs.)	T.D.N. ¹ (lbs.)	Ca. ² (lbs.)	P. ³ (lbs.)	VA ⁴ (I.U.) ⁵
Requirements						
Milking Beef Cows	28	2.3	16.8	.066	.051	42,000
Proposed Ration						
Prairie Hay	18	1.18	7.9	.085	.013	27,000
Barley	5	.57	3.9	.005	.020	
Oats	5	.58	3.3	.005	.017	
Supplement	0.5	.16	.4	.015	.005	20,000
	—	—	—	—	—	—
	28.5	2.49	15.5	.110	.055	47,000
						(2:1 ratio)

F. Herd Management

The herd manager and herdsman appear capable of managing the herd. However, they should be given more assistance in learning good herd management.

Operating consulting assistance should be hired to make up rations and to teach the manager and herdsman in this area. The recognition of disease problems is important. Many diseases can be treated by a herdsman, but it is important to be able to recognize when veterinary assistance is needed.

If time and finance permit, the herd manager should attend a few short courses on beef herd management. If not, a short course should be brought to the Reserve to teach the herd manager and others on the spot with their own cattle.

G. Louse and Warble Treatment

All of the cattle in the Band herd should be treated with "Roulene" * pour-on in early March. Roulene should not be used on animals during December, January or February. This pour-on treatment will effectively control warbles and is a satisfactory control for lice. The ideal time for treatment is in September or October, and should be a yearly practice.

It is important to observe the cattle for five to ten hours after treatment. Occasionally an animal will react to Roulene, where the symptoms are staggering and loss of control. If found early, that is, before the animal is down, exercise by simply driving the animal around will

(worms). The method of feeding will make this problem worse.

Recommendation: The bulls should receive the same ration as that recommended for pregnant cows. This ration should be instituted immediately. A hay feeder should be constructed for these bulls.

E. Milking Cows

As the cows calve in the spring, there should be a separate pasture available. Cows which are milking should receive a different ration than cows which are pregnant. The requirements and suggested ration are as follows:

	Daily Feed (lbs.)	Total Protein (lbs.)	T.D.N. ¹ (lbs.)	Ca. ² (lbs.)	P. ³ (lbs.)	VA ⁴ (I.U.) ⁵
Requirements						
Milking Beef Cows	28	2.3	16.8	.066	.051	42,000
Proposed Ration						
Prairie Hay	18	1.18	7.9	.085	.013	27,000
Barley	5	.57	3.9	.005	.020	
Oats	5	.58	3.3	.005	.017	
Supplement	0.5	.16	.4	.015	.005	20,000
	—	—	—	—	—	—
	28.5	2.49	15.5	.110	.055	47,000
						(2:1 ratio)

usually provide sufficient treatment. If not, a veterinarian should be called. "Antiphrine" is an antidote.

H. Progress

As this report is being written (June), some of the recommendations set out in the foregoing have been instituted and many more could be instituted in the coming months if budget is found.

* "Roulene" is a trade name. There are other products on the market for this purpose which are suitable.

FOOTNOTES

¹T.D.N. —Total Digestible Nutrients — Refers to the amount of energy in the ration that the cow can use.

²Ca. —Calcium — A mineral necessary for milk production and growth. There should be no more than twice as much calcium in the ration as phosphorous.

³P. —Phosphorus — A mineral necessary for milk production and growth. The amount of phosphorus should be somewhat greater than half the calcium, if it is not then the phosphorous should be increased.

⁴Vit. A —Vitamin A — A very important part of a cattle ration.

⁵IU —International Units — This is a standard measure of Vitamin A.

APPENDIX IV

TERMS OF REFERENCE

I. Name of Project

Comprehensive Study — Planning and Training — Sarcee Reserve.

II. Objectives

The long term objective of this project is to assist the Sarcee Indians to develop by creating jobs and income for members of their Band, and at the same time utilize to a maximum the natural resources of the reservation.

The immediate objectives may be listed as —

1. To identify and inventory the resources of the reserve both human and physical.
2. To determine the potential for growth of these resources.
3. To assist the Indian people through involvement in planning the development of their resources.
4. To determine and identify the relationships and development of the natives in terms of employment and/or financial returns.

III. Benefits:

The direct benefits will be to the Sarcee Indians themselves through involvement in the study, planning and human development through the physical resource planning and development. This study and planning done by the Indians with the assistance of a consultant will enable them to know whether the potential developmental projects will be financially sound and what these projects might be. Some employment in doing the study will be provided, and if physical projects materialize more employment will occur.

The indirect benefits will be an educational process which will assist the Indians to make sound decisions for socio-economic development.

IV. Description

1. Location

All of the Sarcee Indian Reservation.

2. Study Procedure and Activities

The Sarcee Indians have selected Stanley Associates Engineering Ltd., Calgary, with other consultants assisting, to do the study and planning for the reservation. The study will be divided into three parts.

- a. Social-Economic Factors.
- b. Physical Resources.
- c. Plan for Development.

a. Social-Economic Factors

This will include such things as—

1. Education, and vocational and technical skills.
2. Employment history and technical skills.
3. The implications of development on their desires and ambitions.
4. Markets for identified resources.
5. Regulations — Reserve, Municipal, Provincial and Federal.
6. Social organizations, communication, leadership and relationship to the total community.
7. Monetary and physical value of Reserve.

b. Physical Resources

1. Location.
2. Recreation—outdoor.
—indoor.
3. Industrial/commercial.
4. Agriculture—farm.
—ranch.
5. Communication facilities.
6. People.
7. Urban development.

c. Plan for Development

1. Development of location—sites.
—recreation.
—commercial.
—Band buildings.
2. Financial considerations, requirements and funding arrangements.
3. Training requirements.
4. Time factors — phasing and scheduling.

The Indians will be trained by the consulting firm to gather the necessary information for the whole study. Hopefully, this will interest the Indians in the development projects and better enable them to be qualified to handle the operational end of any physical projects recommended and developed.

V. Costs and Revenue:

1. Costs

Type of Expenditure	Total	Provincial	Shareable	Federal Contribution
a. Consulting Fees—1969-70	25,000	—	—	25,000
—1970-71	50,000	—	—	50,000
b. Indian Advisory Group				
\$15.00 per day—1969-70	1,500	—	—	1,500
—1970-71	1,500	—	—	1,500
c. Miscellaneous—1969-70	500	—	—	500
—1970-71	500	—	—	500
TOTALS	79,000	—	—	79,000
Totals—1969-70	27,000	—	—	27,000
—1970-71	52,000	—	—	52,000
TOTALS	79,000	—	—	79,000

2. Revenue

There will be no direct revenue from this project.

VI. Organization:

This project will be administered by HRDA in co-operation with the Sarcee Band Council, a committee established by the Indians of the Band Council, and three Indian members, along with Mr. G. R. Sterling, Co-

ordinator of Rural Development Administration; Mr. Ken Brown, Superintendent in Charge, Blackfoot Stony Sarcee Agency; Mr. C. H. Harvie, Parks Planner, Department of Lands and Forests; Mr. M. W. White, Rural Development Co-ordinator, Federal Department of Regional Economic Expansion; Mr. I. R. Huene, Department of Industry and Tourism; and Mr. Ernie Williams, Industry and Small Business Officer, Department of Indian Affairs and Northern Development.

